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ORIGINAL ARTICLES

PHAGOCYTIC IMMUNITY AND THE THERAPEUTIC INJECTION OF DEAD BACTERIA IN ENDOCARDITIS. PRELIMINARY REPORT.*

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INTRODUCTION.

Our knowledge of the factors which determine the localization of micro-organisms on the endocardium in endocarditis, their maintenance and the means of defense on the part of the host, is still obscure. It is not difficult to understand how the endocardium becomes involved during lobar pneumonia with its pneumococcemia, or in septicopyemic conditions due to the streptococcus or staphylococcus. In fact, in these cases this is what we would occasionally expect. The cases of endocarditis, on the other hand, that develop insiduously from no demonstrable source of infection or from an infection which is slight and which runs a more chronic and milder course are more difficult to understand.

In fourteen cases of pneumococcus endocarditis of the latter type the pneumococci isolated from the blood before and after death were readily taken up *in vitro* by leucocytes in the patient's and in normal blood. They possessed no virulence, or very slight, to animals. This observation was made also in the case of staphylococcus endocarditis.

The pneumococci isolated from the blood in lobar pneumonia, on the other hand, uniformly resist phagocytosis and possess a correspondingly high grade of virulence to animals.[1]

How do the micro-organisms in endocarditis of this mild type protect themselves in the blood and endocardium and ultimately cause death when they seem to be without virulence, while those in pneumonia with

* From the Dane Billings Fellowship in Medicine, Rush Medical College and the Memorial Institute for Infectious Diseases, Chicago.
* Read before the Chicago Medical Society, Dec. 23, 1908.

1. Human Pneumococcal Opsonins and the Antiopsonic Substance in Virulent Pneumococci, Jour. Infect. Dis., 1907, p. 285.

their high grade of virulence are usually destroyed and recovery is the rule? The object of this study was primarily to explain, if possible, the mechanism involved in these and other allied questions and to determine the effect of the therapeutic injection of dead bacteria in endocarditis. A full report of the experiments will appear later.

CONSIDERATION OF CASES.

Clinically the cases are all characterized by a subacute course and, while they must be regarded as cases of malignant endocarditis in that the patients all succumbed to the infection, they should properly be classed under the group designated in Osler's recent communication as chronic septic endocarditis. All but three occurred in patients between 15 and 29 years of age. The occupation of all was chiefly indoors. Six of each sex were affected. In nine cases the original source of infection could not be determined; in one it seemed to be an attack of tonsillitis; in another the most probable source was pyorrhea alveolaris, while in still another it was an abscess of the alveolus and tooth. The exact duration of the process could not be determined accurately, but probably ranged from four to twelve months or more in the different cases. The blood cultures were the means of making an early positive diagnosis in almost all of the cases. The making of a correct diagnosis on the clinical grounds in most of the cases was difficult, because of the insidious onset, the chronicity and, most of all, because the acute process was engrafted on an old valvular lesion in seven cases. In three cases this point could not be definitely settled, while in four no definite heart lesion was present. Of the four last mentioned there was a definite source of infection in two, while in the other two there was none. Petechial hemorrhages in the skin, one of the much sought for signs in endocarditis, occurred late in nearly every one of the cases long after the blood showed pneumococci. Probably the most constant feature was the development of an anemia of a secondary type. This was most pronounced in the cases which ran a more chronic course. A persistent leucocytosis was present in only four of the cases; the rest showed little or only temporary increase in the number of leucocytes. The leucocytosis was excessively high in the case of peculiar staphylococcus endocarditis, going to 120,000 just before death. Definite chills occurred only rarely and in no case in which chills seemed to mark the onset of the disease. Early the fever was remittent in type. In some patients the temperature was normal for weeks, and then showed an afternoon rise for a short period. Later as embolism and petechial hemorrhage occurred the fever took on a septic or intermittent type and was associated with sweats.

Autopsies were obtained in six of the cases. Anatomically the valvular lesions were all characterized by huge vegetative growths on the valves involved. Usually the surfaces of the vegetations were studded with recent small necrotic areas and ulcers. The infarcts found showed no suppuration.

BLOOD CULTURES.

It is an accepted fact that fluid media are more efficacious than solid media in routine blood cultures. All observers have obtained a higher percentage of positive results by this means in pneumonia, typhoid fever and septic processes generally. In endocarditis of the type under consideration, on the other hand, solid agar media have given positive results repeatedly where the cultures in broth and milk remained sterile. For this and for the reason that the latter method is a means of obtaining a knowledge of the number of bacteria circulating in the blood the importance of making inoculations in both liquid and solid media in all cases in which endocarditis is suspected may be emphasized. Repeated cultures in a number of cases showed that, while the bacteria is constant, the number of bacteria is never very great. The number of colonies varied between 4 and 2,000 per c.c. of blood. The organisms isolated from the blood before and after death are undoubtedly pneumococci in all but one case, which yielded a staphylococcus with certain peculiarities. The pneumococci isolated are quite different from those isolated from the blood in pneumonia. As above stated, they are freely susceptible to phagocytosis when isolated and possess practically no virulence to animals. They grow tightly to the surface of blood agar and in clumps of broth and in the fibrin clot of the blood culture in broth. The properties were more pronounced in some strains than others, and in one case became more pronounced as time went on. These properties are lost sooner or later on artificial cultivation and on animal inoculations, the organisms then taking on the characteristics of typical pneumococci.

ANIMAL EXPERIMENTS.

The characteristics just mentioned are believed to be environmental modifications and to bear a close relation to the ability of the organism to produce endocarditis. By inoculations into animals of huge doses of the organisms before the special characteristics were lost, endocarditis resulted without injury of the valves in the case of all the strains tested (six), endocarditis being produced in sixteen rabbits without injury to the valves. Pericarditis developed in every instance in which the endocardium was involved. This was quite independent of the place of inoculation. The special affinity these organisms had for the endocardium, pericardium and the intima of the blood vessels is striking. Intraperitoneal, and usually subcutaneous injections as well, cause no lesions in these regions, but produce a pericarditis and endocarditis instead, especially when a simultaneous dose is injected intravenously. In order to produce endocarditis it was necessary to inject huge doses and preferably into different regions of the body. The animals recovered promptly from the immediate effects of the injection. Blood and peritoneal cultures at the end of two or three days were sterile. Later, two or three weeks after the valvular lesions became pronounced, a loss of weight, fever and dyspnea occurred and in some instances a definite heart murmur developed.

After the special characteristics were lost it was no longer possible to produce endocarditis. The experimental production of endocarditis in the past has been considered quite impossible without trauma to the valves. The earlier attempts in this study were probably failures because the organisms were inoculated too long after isolation and injected in too small doses.

THE OPSONIC INDEX AND THE THERAPEUTIC INJECTION OF DEAD BACTERIA.

Early the opsonic index is usually normal or a little above, depending on the presence or absence of extension or accidents, such as thrombosis and embolism. Toward the end it falls far below normal. Four cases showed a rise just before death. The injection of the homologous dead organisms early in these cases was followed in 24 and 48 hours by a rise in the opsonic index and in the leucocytes; usually there was also a corresponding rise in temperature. Clinically no change for the better or worse could be noticed so long as the index was up and the general condition of the patient good. Later, however, after the patient's condition was poor and the opsonic index far below normal, the rise in leucocytes and opsonic index was associated with a drop in the temperature and a definite improvement in the general condition. The rise in the opsonic index and leucocytes following the injection of dead bacteria is apparently not associated with the reduction of bacteria circulating in the blood.

A painstaking study of the method by which the bacteria in these cases seemed to protect themselves against the antibodies of the host may be briefly summarized:

1. By cultivation in the serum and blood of the patient these organisms acquired a resistance to opsonification and phagocytosis instead of an increased susceptibility.

2. They usually grew more rapidly in the patient's serum than in normal serum.

3. While leucocytic normal blood had a marked bacteriolytic effect due to phagocytosis and intraleucocytic destruction, the patient's blood containing the same number of leucocytes, the serum having a high opsonic index, often had no bacteriolytic action. This seemed not wholly due to the lack of phagocytosis, but to the inability of the leucocytes to destroy the bacteria after they had taken them up.

CONCLUSIONS.

1. The blood culture in endocarditis is the best means of making an early diagnosis. It should always be made for the identification and study of the infecting organism as well as for prognostic reasons. Barring accidents, the greater the virulence the more grave the prognosis.

2. The therapeutic injection of dead bacteria in endocarditis has very little influence on the course of the disease until late in the course, when there is a temporary improvement following the injections.

3. A very close relation exists between the biologic character of these organisms and their ability to produce endocarditis in the class of cases observed.

4. The organisms isolated, while of practically no virulence to animals and susceptible to phagocytosis on cultivation, appear to immunize themselves against the antibodies produced by the host, and thus to overcome the resistance of the latter.

I wish to express my gratitude, especially to Dr. Billings, in whose service all but three of the cases occurred; to Drs. Sippy, Herrick and C. T. Clark, for one case each, and to Dr. Hektoen, for aid in the work.

HYPERCHLORHYDRIA AND ITS TREATMENT, BASED ON ANIMAL EXPERIMENTS.*

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A great deal of ambiguity still exists concerning the proper diet and treatment of hyperchlorhydria. It is generally believed that an albuminous diet, especially meat, is to be preferred. Schloss, in a recent paper, proved experimentally that a vegetable diet was less irritating and caused less secretion than an equivalent amount of meat. A number of years ago Jurgensen, v. Jaksch and Sohlern, all able clinicians, empirically advised against meat and urged that vegetables be the principal food in cases with hyperchlorhydria. The following work was undertaken at the University of Chicago, in the Department of Experimental Physiology, to determine the HCl reaction of the stomach with various articles of food and further to study the influence of drugs on this secretion.

Two dogs were skilfully prepared for me by Dr. H. M. Richter, according to the method of Pawlow. By this operation the stomach is divided into two stomachs, the larger portion being continuous with the esophagus and duodenum, while the smaller one is converted into a blind pouch with a fistula leading to the abdominal surface. The two stomachs are continuous only by the peritoneum and muscularis, and are separated by the mucosa which forms the floor of the upper segment and the roof of the small pouch. Inasmuch as the vessels and nerves run in the muscularis and serosa, both stomachs have the same nerve and blood supply and both react in all details the same. When food is introduced into the larger stomach, the smaller one secretes, parallel with the larger one, a gastric juice which is uncontaminated by food and which can be collected in pure form through the abdominal fistula.

The dog was starved for 15 hours before each experiment, and the small stomach thoroughly washed with normal salt solution before the feeding. Usually the dog ate eagerly of the various types of food, and

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* Read before the Annual Session of the Illinois State Medical Society, May 19, 20 and 21, 1908.

later when the drugs were used they were smuggled in with the food. The various vegetables were all boiled in normal salt solution and crushed and strained through a coarse sieve. In each case, whether vegetables, milk or meat were used, the experiment was repeated several times, and the following represent the average of the several experiments:

Potatoes.—Amount given, 250 c.c.; total time of secretion, 1 hr. 35 min.; total amount of secretion, 12.2 c.c.; free HCl, 88; total acidity, 104.

Spinach.—Amount given, 250 c.c.; total time of secretion, 1 hr. 40 min.; total amount of secretion, 15.4 c.c.; free HCl, 95; total acidity, 120.

Carrots.—Amount given, 250 c.c.; total time of secretion, 1 hr. 25 min.; total amount of secretion, 14.1 c.c.; free HCl, 93; total acidity, 115.

Milk.—Amount given, 250 c.c.; total time of secretion, 2 hrs. 10 min.; total amount of secretion, 15.7 c.c.; free HCl, 118; total acidity, 147.

Meat.—(a) Lean meat put through a meat chopper. Amount given, 1 pound; total time of secretion, 4 hrs. 15 min.; total amount of secretion, 32 c.c.; free HCl, 101; total acidity, 138. (b) Lean meat fed in large pieces: Amount given, 1 pound; total time of secretion, 7 hrs. 20 min.; total amount of secretion, 63.2 c.c.; free HCl, 110; total acidity, 146.

In the experiment with drugs one pound of meat was used and it was fed in large pieces.

Hyoscin Hydrobromate.—Amount given, 1/50 gr. by mouth; total time of secretion, 6 hrs. 45 min.; total amount of secretion, 52 c.c.; free HCl, 120; total acidity, 152.

Morphin Sulphate.—Amount given, ½ gr. by mouth; total time of secretion, 7 hrs. 10 min.; total amount of secretion, 56.3 c.c.; free HCl, 116; total acidity, 154.

Atropin Sulphate.—Amount given, 1/50 gr.; total time of secretion, 4 hrs. 20 min.; total amount of secretion, 25.8 c.c.; free HCl, 118; total acidity, 151.

Strontium Bromid.—Amount given, 15 gr. by mouth; total time of secretion, 4 hrs. 40 min.; total amount of secretion, 27 c.c.; free HCl, 98; total acidity, 136.

Strontium Bromid.—Amount given, 30 gr. by mouth; total time of secretion, 3 hrs. 30 min.; total amount of secretion, 17.1 c.c.; free HCl, 102; total acidity, 145.

These experiments confirm the observation of Pawlow and his students, that the per cent. secretion of HCl is constant and does not vary with changes in diet, nor is it influenced by drugs. That this is also true for the human stomach has been shown by Bickel. He studied a normal stomach in an adult girl, who, because of a benign stricture of the esophagus, had a gastric fistula, and, in imitation of Pawlow's work, had the esophagus cut across, the upper end brought out to the skin surface and the lower end closed. When the girl was fed, the food, after being masticated, passed through the upper segment of the esophagus and then dropped out. As Pawlow observed in dogs, so likewise in this case, the sham feeding induced a constant and marked flow of the gastric juice, which was collected in pure form through the fistula.

He found that, under all circumstances, the per cent. HCl secreted was quite constant, and that it was two to three times greater than we had believed, measuring 0.4 to 0.55 per cent. He found, however, that variations in the quantity secreted easily occurred. Bickel's work has been confirmed by several observers. No case of so-called hyperchlorhydria has been observed where the extreme per cent. of normal HCl has been exceeded.

The variation in the per cent. of HCl that we have noted after a meal depends on the quantity of HCl secreted, the combining power of the food ingested and on the motor power of the stomach. In addition, one must consider the neutralizing power of the mucus and the dilution by the transudate. But the important chemical fact prevails that in hyperchlorhydria we are dealing with a quantitative variation in the secretion—not in a qualitative one. The necessity for acid is supplied by variations in the quantity of juice and not by qualitative changes in its acidity. Our effort, then, in the treatment of this condition should be directed, not merely to binding and neutralizing the excess of the acid, but our therapy should be directed to a reduction of the amount of secretion called forth.

The choice of food that causes least secretion is clearly the vegetables. It excites a smaller amount of secretion per hour, and the total time of secretion is less than one-half that induced by meat. Inasmuch as the same food in a finely divided form reduces the secretion time more than one-half, all foods should be crushed or finely ground or put through a sieve. The vegetable puree is an ideal article of diet. These vegetable soups should be made with water or milk and not with meat, for meat extracts are powerful excitants of the gastric juice.

In addition to vegetables, milk, cream, egg albumin and toast, with butter freely, may be used early, and later stewed fruit, finely mashed, and eggs may be included. Only when the hyperchlorhydria is under control should meat be allowed and then for months the meat should be given cut up fine.

Alkalies are useful in neutralizing the excess of acid secreted, but they can also check secretion if used as Rosenblatt has suggested, one-half hour before meals. He has shown that they act indirectly and exert their influence by reflex action in the bowel. They should be used in amounts large enough to pass as alkalies into the duodenum. Sodium bicarbonate is the best to use and it is well to combine it with sodium sulphate, for it, too, decreases secretion. For neutralizing purposes, if necessary, burned magnesia powder may be given one-half to one hour after meals.

Oils and fats act in a similar manner to the alkalies, decreasing secretion. Cowie and Munson demonstrated that the best results were obtained and the secretion most reduced when olive oil is given before meals, for it acts reflexly in the bowel. It should be given twenty minutes before meals. Cottonseed oil, butter fat and cream all act similarly and are useful.

In these experiments many drugs were tried and only two were found to be effective. Hyoscin and opium have very little, if any, effect, contrary to the statements in the text-books, and should not be used. Belladonna reduces the secretion markedly, especially if given before meals, and can, as the powdered extract, be combined with the alkaline powder. All of the bromids check secretion, but the strontium salt is the most active and it is best given before meals.

For beverages the patient may be allowed water, milk, weak tea and cocoa. Alcoholics of all sorts, carbonated drinks and coffee are harmful.

Finally it is hardly necessary to emphasize that any underlying condition of which the hyperchlorhydria is but a symptom should be properly treated. Neurasthenia, constipation, arteriosclerosis, anemia and motor insufficiency of the stomach must all be looked for in addition to the other common causes of hyperchlorhydria, and be relieved if the best and permanent results are to be obtained.

I desire to express my thanks to Prof. S. A. Matthews, of the University of Chicago, for his helpful advice and many courtesies extended during these experiments.

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DISCUSSION.

Dr. Joseph L. Miller, Chicago.—It seems to me, a paper which represents so much work on the part of its author should not go by without some discussion. The only point I wish to speak of is with reference to the method which he has employed of directly attacking therapeutic problems and of putting therapeutics on a rational basis. Work of this sort is valuable, where we have by direct experimentation determined accurately the effect of drugs, or diet, upon the secretions. It is work of this sort which will make therapeutics as scientific as the diagnosis or pathology of disease.

Dr. J. F. Hultgen, of Chicago: I am very glad to hear a report of the experiments performed by Dr. Portis. The demonstration he has given us is very interesting. It is the best thing I have seen in this country. It marks a milestone in our experimental physiology, and we should be proud of the fact that there is some one in America who has sufficient energy and enthusiasm to do this work. But while we are enthusiastic, we must not forget that this work is not done under normal conditions. No one can really say that this dog was quite normal or moving around under normal conditions; he has not had any exercise. In short, he is not leading a dog's life.

The Doctor has certainly obtained very good and substantial results. However, he reasons this way (if I understand him rightly): he has produced secretion in the dog, not hypersecretion. He has no hyperacidity. When a dog has a large piece of meat in his stomach for seven or eight hours, and secretes gastric juice so long, it is an abnormal action only in point of time.

This kind of work was started by Pawlow and his school. They took the question of digestion out of the hands of the Germans, who had treated it as a chemical process, and showed us that it was a psychic one but with a physical basis. But recently Bayliss and Starling have come forward, and by means of ingenious experiments have shown us that certain chemical substances pro ferments are produced, which are independent of the nervous system.

Dr. Frank Billings, of Chicago: I wish to express my appreciation of the work of Dr. Portis. This is the sort of work we ought to see done everywhere. It is work that is going to settle questions in therapeutics that are now considered empirical. For many, many years we talked about cholagogues, and some of us talk about them still—medicines that increase the flow of bile, yet not more than eight years ago it was proved by experimentation not only upon animals, but, as it happened in a case which occurred in a human being, that there was no drug which increased the bile flow, that is, the total amount in twenty-four hours. Bile itself given will increase the total amount of bile, but nothing else will. Such work as this furnishes us with accurate data concerning the effects of drugs. While the results of experiments upon dogs may not be the same as those obtained by experimenting upon man, yet it is this sort of work which makes our observations and the results of our work more accurate.

Those of you who have not read Pawlow's book on the "Work of the Digestive Glands" should get it and read it. So far as its interest goes, Dr. Portis has given us a repetition of his work and findings.

Dr. Arthur R. Elliott, of Chicago:—Before Dr. Portis closes the discussion I would like to add my compliments to those which have been paid him on his work. However, in making application of the results secured by the experimental method, such as he has graphically described here, to the human, there is one great gap which exists, and that is the element of personal equation—the psychic element. In dealing with hyperchlorhydria in the human we have to do with a neurosis, or perhaps there may be argument on the question as to whether or not hyperchlorhydria is a neurosis of the stomach. There will be no question as to the psychic element at work, for all neurotics are at times hyperchlorhydriac. The business man under the strain of great business responsibility has been preparing perhaps for an examination; the woman, who has undergone grief and deprivation is very apt to be a hyperchlorhydriac, and neurasthenics generally and victims of nervous diseases are hyperchlorhydriacs. Here the application of proper dietetic measures, the employment of drugs to restrain excessive secretion, are, of course, necessary, but in addition there is a psychic element which has to be catered to, and until it is catered to we often fail to cure. So a sea voyage, a change of environment, we find to be very important, and nux vomica should be given in these cases which is well known to be exceedingly favorable for them, as well as other tonics on account of their effects upon the nerves and the part they play in improving the general condition. So we have to pay attention not only to the stomach chemistry but also to the condition of general strength of the patient, and particularly the condition of the nerve tone.

Dr. Winfield S. Hall, of Chicago:—The side of this most admirable paper and demonstration that appeals most to me is naturally the physiological, and I was especially interested in seeing Dr. Portis demonstrate again one of the great fundamental laws of physiology—one of the laws governing the physiology of the digestive system. I refer to *the law of adaptation*. What is the particular evidence of that law in these experiments? When he gave vegetable food, Dr. Portis found that he got a minimum secretion of gastric juice. When he gave protein meat he got a maximum secretion. As we look at the normal action of the stomach, we find that vegetables call into action the peptogenic activity of the stomach to a moderate degree only because, except in the case of the legums, they have a small proportion of protein. The vegetables of the class with which Dr. Portis experimented (potato and carrot) have a very small percentage of proteins. The action of the stomach would be required in a small degree only. When you give meat to a dog the stomach is the place where this meat is largely digested. So in response to this fundamental biological law of adaptation, the stomach enters at once into its activity to its maximum degree, and if this meat is not finely divided, but bolted *en masse*, as is habitual with the dog, it will remain in the stomach a long time and so call out the long continued action of the stomach, thus multiplying over again the total amount of gastric juice that must be secreted before the food is finally digested.

Pawlow found that if fat is ingested it does not call forth the secretion of gastric juice except in a very low degree; it passes on into the duodenum, and there calls forth its maximum action because the duodenum is the only place where fat is digested.

How can we apply our knowledge therapeutically? I would reason like this: Here is a case of hyperchlorhydria. How shall I give this patient the requisite nourishment, and, at the same time, call into action this gastric mucous membrane to the smallest possible degree? I will give it either fats or vegetable foods. In other words, foods that require the least possible action in the stomach, and yet foods that will sustain the patient from the standpoint of nutrition, and then this food, not irritating, not stimulating the stomach, will pass through, calling forth the smallest possible action. I would, by adopting that method, give the stomach an opportunity to rest and to get into a normal condition where a re-

version to the usual mixed diet, with its larger proportion of meat, would not have the effect of calling forth this extra secretion of hydrochloric acid.

Dr. Portis (closing the discussion):—I want to thank the members very heartily for the manner in which they have received my paper and demonstration. As to the objection raised by some of the members that these experiments are on a dog and not on a human being, and questioning whether similar phenomena would occur in the human subject, I will say such an objection can be quickly answered by stating that the same phenomena have been observed in human beings on two occasions in Berlin under similar conditions produced by operation. These are reported by Bickle and Sommerfeld.

One point in the paper which I did not have time to take up was with reference to the various causes of hyperacidity. It is easily understood that if an individual is neurasthenic, the quickest result will not be obtained by feeding him with vegetables, but by proper treatment for the neurasthenia, the rest-cure treatment, etc. If an individual be constipated and the constipation brings out hyperacidity, treat the constipation. If the individual has motor insufficiency, which brings out such clinical phenomena as have been noted, then, of course, one should treat the motor insufficiency, and the diet is radically different. If, on the other hand, the individual is arteriosclerotic and you notice hyperchlorhydria, then put him on a régime for arteriosclerosis.

It was not possible for me in the twenty minutes allotted to do more than skim over the subject of my paper and to touch on the salient points, but in the published article I will give in detail the results of my experiments, and all of you will have an opportunity to read them.

THROAT DISEASES IN CHILDREN.*

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In considering the field of throat diseases in children, I would first call attention to the appropriateness of the subject in a general meeting of this kind, the need of the most careful attention to what may be termed a many-sided problem of infancy and childhood, and, lastly, that the specialist is not in as good a position to observe the ultimate evil results of throat infection on the growing child as the family physician who follows its development throughout the periods of early life and adolescence. The advances made along nose and throat lines during the past few years has awakened us to an appreciation of the importance of further investigation. To quote one writer,[1] "By far the most frequent disease of childhood is throat infection. In hospital and clinic work this is not apparent because of the transitory nature of the disease, and in these institutions we seldom see but the sequelæ. Not only are infections of the throat the most frequent disease during childhood, but in their results they are among the most serious." In tabulating the data of six years of country practice, the same author finds that "out of a total of 5,625 clinical cases, 396, or 7 per cent., were those of throat infection, occurring principally in children." Morse,[2] in a valuable review of "Diseases of the Nasopharynx in Infancy," finds that, in his experience, "the

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* Read before the Jo Daviess County Medical Society, Warren, Ill., Jan. 7, 1909.

1. Pope, S. I.: Throat Infections of Childhood, California State Jour. of Med., July, 1907.

2. Morse, J. L.: Diseases of the Naso-Pharynx in Infancy, Boston Med. and Surg. Jour., April 18, 1897.

importance of the diseases of the nasopharynx in infancy and the frequency of their occurrence are not appreciated by the general practitioner," and that "they are often either entirely overlooked or insufficiently treated."

Disturbances and interference with digestion, loss of weight, difficult respiration, with consequent deprivation of oxygen, various glandular, ear and infectious processes attacking the body, are logical sequences of many throat infections and to be expected. It is hardly out of place to say that among the frequent causes of death at the different periods, asphyxia, throat infection or any of the acute diseases of the respiratory tract, and particularly broncho-pneumonia, take high rank. With these preliminary ideas in mind, one is better able to appreciate the forceful statements of such pediatricians as Holt, Jacobi, Hutchinson, Koplik, Oppenheim, Rotch, Tuttle, Starr and many others, that a careful inspection of the throat should never be omitted in any acute illness in children, no matter what other symptoms may be presented. Usually it is wise to defer such examination until the last, as the child is so greatly disturbed by the procedure that it generally objects to any attention thereafter.

The requirements for throat work are simple, being chiefly a good light and thorough but rapid inspection of all mucous membranes. On the soft palate one looks for the beginning punctate eruption of scarlet fever, on the pharynx, fauces and tonsils for various processes of infection due to such organisms as the *Bacillus diphtheria,* influenza, staphylococci and streptococci, and on the mucous membrane of the cheeks for the initial eruption of measles. The tongue, gums and teeth must next receive their share of attention. Last and not least the possibility of a pathological change within the nose, together with its etiologic relation as a direct infecting focus for the throat, should be carefully reviewed.

I shall endeavor in this paper to omit all material which does not pertain strictly to children. Likewise the very important subjects of diphtheria and the exanthemata, which are taken up by other speakers, will be scarcely more than mentioned. Although pathological processes attacking the throat in children are in actual numbers comparatively few, the variations in clinical types seem almost endless and prove confusing. The subjects considered are as follows: Rhinitis, adenoids, acute pharyngitis, retropharyngeal abscess, tonsillitis and peritonsillar abscess, or so-called quinsy. To a certain extent they may all be classified as diseases of the digestive system if one were so inclined.

ACUTE RHINITIS.

The types of rhinitis of importance are three in number: (a) acute rhinitis (the common cold in the head), (b) diphtheritic rhinitis, (c) purulent rhinitis (mainly a symptom).

(a) *Acute Rhinitis.*—Acute rhinitis, while ordinarily a self-limited disease and receiving little attention in adults, is a serious and sometimes fatal infection in infants and young children. As expressed by Morse, "A comparatively slight swelling of the nasal mucous membrane in infancy completely closes the nose and prevents nasal respiration. This,

of course, necessitates oral breathing which the young infant performs very imperfectly, especially when asleep. In fact, sleep is so broken in many instances that the baby gets little, if any, rest, and on this account loses strength very rapidly. The occlusion of the nares also prevents proper sucking and interferes a great deal with swallowing, even when the food is given with a spoon or dropper. Consequently the infant takes but little food or refuses it entirely. The temperature in these cases is always elevated, usually irregular and often high. Loss of weight and strength is very rapid as the result of the insufficient supply of fresh air, lack of sleep and deprivation of food, and in feeble babies may be so great as to cause death."

The inflammation, as has been said, is due to infection with micro-organisms and is more or less contagious. Occasionally attacks of head colds, snuffles, etc., in institutions appear as epidemics. For this reason babies and, indeed, all children should be kept away from persons suffering with acute nose or throat troubles and not allowed to sleep in the same bed. Complications in children, such as middle-ear disease, bronchitis, etc., are common. When persistent and frequent colds in the head are seen in children, one should always examine the nasopharynx for adenoids. In addition to the symptoms of nasal discharge, imperfect nasal or oral respiration, interference with swallowing, sucking, broken sleep, etc., seen in babies, we have such signs in older children as sneezing, water discharge and stuffiness of the head.

The treatment varies slightly according to the age. In infants the best result is obtained from liquid petrolatum albus dropped into the nose three times daily. Careful feeding and mild stimulation with a few drops of brandy and small doses of strychnin are other adjuncts. In older children hot baths, hot drinks, a nasal ointment and some one of the many excellent rhinitis tablets on the market containing a little atropia would seem indicated. Inhalations of medicated steam containing compound tincture of benzoin or a few drops of oil of eucalyptus are most excellent. They may also be incorporated in liquid petrolatum, a grain to the ounce and dropped in the nose.

(b) *Diphtheritic Rhinitis* (*So-Called Membranous Rhinitis*).—The results of bacteriological examination have shown that a not inconsiderable number of cases of rhinitis of a mild type are due to the presence of the diphtheria bacillus. Failure to remember this fact has sometimes resulted in epidemics of diphtheria in schools and hospitals. Nasal diphtheria is responsible for many unexplainable outbreaks both in institutions and outlying small towns. A culture is really the only means of arriving at a correct conclusion.[3] The symptoms of the disease are, as a rule, mild with little glandular involvement and often absence of constitutional disturbances. The nasal discharge itself is in no ways characteristic, though more often thin. Membrane, contrary to the general idea, is, as a rule, not seen in the nose. Treatment includes the use of such measures as cleanliness and powders, together with the injection

3. Langworthy, H. G.: Laryngeal Diphtheria, Iowa Med. Jour., May 15, 1908.

of small doses of antitoxin. Systematic cultures should be taken until the nose is shown to be free from bacilli.

(c) *Purulent Rhinitis.*—Nasal suppuration in children is more often a symptom of some other disease, such as foreign body in the nose, adenoids, infection of the nasal mucosa by gonococci from a vaginal secretion, syphilitic disease of the bony walls, sinuses, etc. These sources must be eliminated before a diagnosis of primary purulent rhinitis can be made.

ADENOIDS.

Adenoid vegetations in the vault of the pharynx are probably the most common of all conditions met with in infancy and childhood. As expressed by Holt, "It is the source of more discomfort and the origin of more minor ailments than almost any other pathological condition." The so-called adenoid masses are, in reality, nothing more than hypertrophied lymphoid tissues identical in structure with the faucial tonsils. In other words, the adenoid is a third tonsil in the nasopharynx and subject to the same influence as the other tonsils and forms merely a part of the lymphatic ring at the entrance of the throat. While normally some adenoid tissue exists in every child's throat, with a tendency to atrophy toward puberty, when it becomes enlarged by repeated infections and becomes a cause of either local or remote symptoms, there is hardly any question but that it should be removed in most of the cases.[4] The younger the child the more necessity there is for immediate removal. In infants especially, the evil results are most apparent. The operation itself is simple and almost devoid of danger. As an axiom it may be stated that when persistent or frequent colds in the head (the snuffles of infancy), earache or discharge, conjunctivitis, snoring and restlessness at night are seen in infants or children, the nasopharynx should be examined for adenoids. In carefully analyzing a series of adenoid and tonsil cases relieved by operation, the following symptoms in the frequency of their occurrence were encountered: deafness, mouth-breathing, rhinitis, snoring and restlessness at night, conjunctivitis, earache and ear discharge, backwardness at school, irritating cough, thick voice, frequent sore throats, poor appetite, headache, intestinal disturbances, bronchitis, pleurisy, retropharyngeal abscess and rheumatism. In infants snuffles, convulsions, sweating, slighter impediments in breathing, croupy cough and catarrhal laryngitis were the most prominent signs. Few of the babies had the classical "adenoid facies" so often described, and not all were mouth-breathers. The prevalence of conjunctivitis, noted above and not given in most of the treatises on this subject, is important.

The adenoid and lymphatic ring is probably the common atrium of infection not only in tuberculous adenitis, but in other forms of tuberculosis of the head involving the temporal bone, spine and meninges. To conclude, the subject of adenoids in infancy is of as great importance as dental caries in later childhood and should receive special attention.

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[4] Langworthy, H. G.: Adenoid and Tonsils, from the Standpoint of the General Practitioner, with Special Reference to an Examination of the Throat in Chronic Systemic Infections. Boston Med. and Surg. Jour., Jan. 30, 1908.

Acute Inflammation of the Adenoid.—Acute inflammation of the pharyngeal tonsil is common in children and due to infection. We have not always recognized its frequency, owing to the fact that the masses are hidden behind the nose and above the soft palate. During the acute stage the adenoid is reddened and swollen like the other tonsils, throwing out of its crypts inflammatory exudate and giving rise to fever and constitutional disturbances. The diagnosis is made by direct inspection if possible, temperature, prostration, slight nasal discharge with moderate obstruction, slight redness of the lateral or upper pharynx and negative physical signs elsewhere. Frequent earaches are practically always due to acute adenoid congestion about the orifices of the Eustachian tubes. Some authors are inclined to believe that many of the so-called attacks of febriculæ (ephemeral fever) described by older writers are throat infection of this character complicated with a mild septicemia.

ACUTE PHARYNGITIS.

Acute pharyngitis in children is due to infection. That there are certain predisposing causes, such as exposure to cold, draughts, etc., which reduce the vitality of the mucous membrane sufficiently to produce a local condition of shock, would seem a reasonable explanation. Pharyngeal inflammation, while usually associated with acute tonsillitis, may exist alone or follow a similar inflammation of the nose. The symptoms are throat soreness, rise in temperature, headache and general malaise. In simple pharyngitis the throat, as a rule, shows little more than a moderate hyperemia with evidences of toxic infection. Epidemics of this disease occur. I am indebted to Dr. M. J. Moes for an account of an epidemic of this sort in Dubuque during the past two months:

"The onset is with fever and malaise, accompanied by headache and sometimes pains in the limbs. The fever runs as high as 103.5 for two or three days and is usually accompanied by chilly sensations. By the end of the third day the temperature drops to 101 or 100, and in the course of four or five days more disappears. In one or two instances there has been vomiting at the onset. The throat is usually not complained of, but, if examined on the second or third day, it is found to be reddened. A punctate eruption is usually discovered on the pillars of the fauces, soft palate, posterior half of the hard palate, and a little later appears on the posterior pharyngeal wall. By the end of the third day there is some soreness of the throat, the uvula appears edematous, and the submaxillary glands slightly enlarged. The tongue in most of the cases has a rather thick, dirty white fur through which the papillæ can be seen, giving the appearance of the strawberry tongue of scarlet fever. The circumvalate papillæ show marked enlargement. The fur on the tongue often disappears after six or seven days and the organ then appears dusty-red, swollen and dry. The cases seen were in children from six to twelve years of age, except one, a young man of 22, and is epidemic in character. There is no eruption on the general skin surface, groins or axillæ, nor is there any signs of desquamation. The condition

is an interesting one, especially from a diagnostic standpoint, suggesting, as it does, scarlet fever, without a skin eruption."

The above description is an accurate one, and I have no doubt that you have all seen the same phenomena in numerous instances and wondered whether the case was scarlet fever, with perhaps a delayed rash. In this connection I shall take the liberty of repeating the observation of McCollom, probably one of our greatest living experts on contagious diseases in regard to making a diagnosis when really demanded, namely, that "the appearance of a punctate eruption in the axillæ and in the groins, together with the congestion of the tonsils and a punctate eruption in the roof of the mouth, no matter whether there is any eruption anywhere else or not, are positive proofs of scarlet fever." In early and especially in doubtful cases this idea will solve almost any of the problems confronted.

In infants the mucous membrane of the pharynx and fauces in acute pharyngitis, besides being reddened, is apt to be edematous as well. Sucking and swallowing is interfered with and there may be cyanosis from difficult respiration. Cases in young infants being more or less self-limited are necessarily hard to handle. Drugs internally seem useless, and even local applications to the nose and throat are not always of positive benefit. At times the mildness of the attack has resulted in the primary disease being overlooked, and any existing sequelæ from toxic products, therefore, never explained.

Treatment.—The following routine treatment as employed in private practice by Dr. I. S. Bigelow where the condition is one of diffuse hyperemia with a little, thin, dirty exudate scattered over the tonsils is excellent: "Calomel in divided doses, acetylphenetidin repeated in one or two grain amounts according to age, wet compresses (cold) to the throat, *ad libitum,* and a mixture tablet containing tincture of aconite, tincture of belladonna, tincture of bryonia and sodium salicylate in oil of wintergreen. The aconite is excellent in reducing temperature without being actually harmful, the belladonna relieves irritation and the salicylate lessens the liability of complications, besides being an antiseptic. If the child is old enough to gargle or spray it is allowed to do so. For a great deal of throat or reflex ear pain a minute dose of morphin (1/200 gr.) is given without hesitation."

RETROPHARYNGEAL ABSCESS.

The retropharyngeal abscess of infancy is a suppurative inflammation of the retropharyngeal lymph nodes which form a chain on each side of the median line of the pharynx. These nodes drain the cavities of the nose, nasopharynx, middle ear, etc., and during the first three years of life are extremely liable to infection. If the possibility of this disease is not considered in certain instances, the condition will be overlooked and a diagnosis of croup, bronchitis, rhinitis, etc., made instead. Inspection should never be relied upon. A digital examination is the only sure method of detecting the presence of a retropharyngeal swelling.

Symptoms.—The early symptoms are not characteristic, being chiefly those of a rhinitis or perhaps pharyngitis. The baby seems a little feverish, irritable and unwilling to take food, or there may be difficulty in swallowing. Inspection is negative at this stage. A few small glands, however, may be found at the angle of the jaw, proving ofttimes the solution of the problem. Gradually the neck seems to grow stiffer, the head held more rigidly, or perhaps drawn toward the shoulder, and the few glands in the neck on that side slowly enlarge. Some mucus is often noticed in the throat, together with distinct attacks of dyspnea. If the retropharyngeal adenitis be low, laryngeal obstruction is marked and the diagnosis of laryngeal diphtheria sometimes made. Gradually an indefinite fulness on one side of the pharynx can be made out, and palpitation is sufficient to warrant a positive diagnosis. If the abscess is high up in the pharynx, the laryngeal symptoms are not prominent and the cry is nasal. When the swelling has reached a noticeable size, pus is usually formed and is ready to gush out into the mouth. While one should never jump to the diagnosis of laryngeal diphtheria, there are probably a larger number of cases of diphtheritic laryngitis mistaken for simple croup than retropharyngeal abscesses mistaken for diphtheria. I have always held that McCollom's teaching, "where there is marked dyspnea with rigidity of the sterno-cleido-mastoid muscles with supraclavicular and substernal retraction, excluding a retropharyngeal abscess, peritonsillar abscess and tumor pressing on the larynx, we have to deal with a case of laryngeal diphtheria," as both sound and wise. In other words, treat every case of severe croup as diphtheria unless proven otherwise, and the other thing, in many instances, which must be excluded is an unsuspected retropharyngeal abscess.

Prognosis.—The prognosis is good if the disease is recognized fairly early and the abscess evacuated. Spontaneous evacuation should never be awaited, but an immediate and generous incision made through the mouth, with the patient in an upright position. The pharynx should be palpated daily thereafter to press out accumulating pus. A knife is seldom required to open the abscess, the incision being easily made with a blunt scalpel or pointed scissors. The presence of adenoids or associated rhinitis is probably the prolific cause of retropharyngeal adenitis in most all cases.

ACUTE TONSILLITIS.

The tonsils being lymphoid in structure absorb many of the poisons adhering to their surfaces or filling the crypts. Poisons of various kinds, bacterial or otherwise, are quite readily taken up by the lymphatics and, reaching the general circulation, produce a toxemia similar to any surgical infection. Acute follicular tonsillitis is the characteristic inflammation in children, involving the whole tonsils and especially the tonsillar crypts. It is not as common a disease in infants as in older children and young adults. While the tonsillar infection is ordinarily considered a local affair, in reality the complications reported are so numerous and so serious that few diseases are worthy the close study and extended observation as the one under discussion. The sequelæ includes such results

as cervical adenitis, acute articular rheumatism, general septicemia, peritonsillar abscess, nephritis, pyelitis, otitis media and mastoiditis, heart changes, gastroenteritis and many other lesions. Patients are left in a weak and depressed condition for long periods of time.

Treatment.—The best treatment for the condition is a widely discussed problem. Most authorities agree that constitutional management is in many cases of as much importance as the local treatment. I think one of the best means of obtaining an insight into the methods employed is to quote very roughly the methods used by busy men around us. The following line of treatment is one pursued by Dr. J. R. Guthrie, of Dubuque, in practically all of his cases: "Immediate administration of castor oil or calomel in divided doses, castor oil being preferred; cold packs to the throat, hot mustard footbath and internally a mixture of potassium chlorate ℥i, muriatic acid m xii, water to ℥i. Directions: Teaspoonful every hour for at least eight or ten doses." Guthrie does not use gargles or sprays or any drug to reduce temperature and thinks that the fewer drugs used in any disease the better.

G. A. Staples, Dubuque, Iowa:—"In the treatment of tonsillitis, fomentations, cold compresses to the neck, warm washes (boric acid) for the mouth and as gargles—all give relief. The throat should be brushed lightly three or four times a day with glycerite of tannin or borax, solution of chlorid of iron and glycerin (equal parts) or chlorid of zinc. Small doses of potassium chlorate in decoction of cinchona, with perhaps some salicylate, relieve the pain and apparently hasten resolution. Guaiacum in small doses, if given at the outset, will sometimes cut it short. A lozenge containing gr. ii or iii should be sucked every two or three hours. In acute tonsillitis, whether primary or secondary, the liability to the occurrence of acute otitis media must always be kept in mind and much may be done along the lines indicated for its prevention."

NOTE.—The following measures pursued by the writer in acute tonsillitis of young adults seems to meet the requirements in most cases. In addition to the routine requirements of opening the bowels, light diet and confinement to the house, two sprays are employed in a DeVilbiss atomizer No. 16, which has two bottles but no metal corks or washers to get out of order. The first is composed of equal parts of Dobell's solution and hydrogen peroxid especially useful for cleansing when there is exudate. The second solution is a simple one of alcohol and water, the proportion of alcohol being as much as the patient can stand without too great discomfort. A hot mouth wash of the same is also beneficial. Copious spraying is resorted to at frequent intervals and an ice collar tied around the neck. In addition, acetylsalicylic acid gr. v every hour for a number of doses is given and repeated every day if necessary. I do not hesitate to use opium preparations if the patient is unable to obtain rest or sleep. Astringents are avoided as a rule until the inflammation has begun to subside. Gargles, beyond the benefit of the heat which they may contain, do not reach the seat of the trouble, and most spraying machines are practically useless for the purpose for which they are intended. The relief of congestion, swelling, pain, etc., from cold applications is marked.

ENLARGED TONSILS, CHRONIC HYPERTROPHY OF THE FAUCIAL TONSILS.

Enlargement of the tonsils in children, most common after 2 years of age, is due to repeated mild attacks of infection. All degrees are encountered from slight hyperplasia to a condition in which the throat is almost completely filled with tonsillar tissue. As adenoids are associated in 85 per cent. of the cases, an examination of the nasopharynx should always be made. Besides symptoms referable directly to the tonsils, we

have the added combinations, due to the presence of adenoids. Enlarged tonsils are a constant menace to the well-being of the child, favoring local and general infections all the way from acute tonsillitis to tuberculosis and endocarditis. When a source of trouble they should be removed. A so-called regrowth, a recurrence, is impossible if the entire organ has been eradicated.

PERITONSILLAR ABSCESS.

Peritonsillar or, better, supratonsillar abscess is a unilateral inflammation of the cellular tissue adjacent to the tonsil. It is less common in children than young adults, and on account of the anatomic construction of the tonsil at birth rather rare in infancy. In most instances the suppuration is explained by obstruction to drainage from tonsillar crypts opening into the supratonsillar fossa. This supratonsillar fossa is a small space above and behind the tonsil proper. The symptoms of abscess are familiar and require little repetition. In most cases the recognition by inspection is easy.

Treatment.—A consideration of treatment is very important. In the early stages I am in the habit of prescribing a hot gargle of soda hyposulphite, a teaspoonful in a small glass of hot water every hour. Hot poultices to the neck of the affected side, supportive measures, and, indeed, any medication which will make the patient more comfortable and tide him over a few days of suffering are indicated. In my own cases an incision is reserved for a few days until a certain amount of pus has formed. The incision is then made directly into the peritonsillar region at a point which seems, in one's judgment, to offer the best chance of striking the abscess. This point is usually obtained by gently palpating with the finger and not wholly by inspection.

THE DIFFERENTIAL DIAGNOSIS BETWEEN BRONCHOPNEUMONIA AND CEREBROSPINAL MENINGITIS AND GASTROENTERITIS IN THEIR EARLY STAGES.

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The differential diagnosis between bronchopneumonia, cerebrospinal meningitis and gastroenteritis is not easy to make in the early stages of these diseases. The three diseases are of an infectious nature, and either of the three may be caused by any of a number of micro-organisms, although pneumonia is a little more definite in this respect. At any rate pneumococcus is present; whether it is always the originator of the trouble can not be positively stated; with cerebrospinal meningitis and gastroenteritis the micro-organism may be one of many. It may be possible to find all three of these diseases during one sickness of a child. If this happens it usually goes from gastroenteritis to pneumonia and

meningitis. This is not common; in fact, few could live long enough to complete the three.

In this paper I am going to consider the three diseases in the early stages. The source and mode of infection in any one of these three diseases may be one of many, but each has its most prevalent route, which is well to hold in mind in trying to arrive at a diagnosis. The prevalent route for pneumonia is through inspiration, with the air contaminated by dust and smoke. I leave the discussion for another time as to whether pneumococcus comes in with air or is a resident of the throat and tubes and awaits its favorable opportunity, the irritation of mucosa by foreign material in the air.

The favorite route for cerebrospinal meningitis is through the blood current direct or by continuity of tissue. In either case there must be a focus of infection. If this is remembered or discovered in getting history, it will throw some light on the case.

In gastroenteritis the favorite route is with food ingested or anything put into the mouth or swallowed. The micro-organisms so taken utilize the food as a culture media, generating a toxic material, which, absorbing, produces the first symptoms, as well as so irritating the mucosa, as to allow it to be invaded by the micro-organism. We have two stages: The first is the result of the absorption of toxic products from spoiling food; the second is the inflammatory stage, the mucosa being invaded.

In order to shorten this paper and render it less cumbersome, I have arranged the symptoms in a tabulated form and refer to them in the following order:

BRONCHOPNEUMONIA.	CEREBROSPINAL MENINGITIS.	GASTROENTERITIS.
No. 1 Onset abrupt with chills and rapid rise in pulse and temperature, if primary; if secondary to any antecedent disease, less abrupt. In either case there is cough and tendency to cyanosis.	No. 1 Onset sudden with chill and headache.	No. 1. Onset sudden, with history of indigestion for a day or two, food not relished or refused.
No. 2. Marked depression; no eruptions.	No. 2. Marked prostration with bluish or purple rash; hence name "spotted fever." (This is apt to be a late symptom.)	No. 2. Prostration not so marked in beginning unless there is profuse diarrhea at start.
No. 3. (a) Ratio of pulse and respiration is 1-3 or 1-2. (b) Character of respiration, normal: Inspiration, expiration and pause. The pneumonic type is inspiration, pause, expiration, accompanied by a pneumatic grunt indicating pain.	No. 3. (a) Pulse rapid, respiration but little disturbed except in character. (b) Respirations are sighing, sobbing and irregular, with rhythm in irregularity and later in the disease may take on the Cheyne-Stokes type.	No. 3. (a) Pulse and respirations maintain nearly normal ratio, unless diarrhea is so profuse as to drain system of fluid, thereby producing shock with subnormal temperature, in which case pulse would shoot up out of all proportion to respiration. (b) Respiration irregular. Either inspiration or expiration cut short by twinge of colicky pain.
No. 4. Fever high and of remittent type. Cough severe and persistent.	No. 4. Temperature usually high and widely fluctuating from 100° to 105°. No cough.	No. 4. Temperature high, "toxic fever," fluctuating governed by amount of drainage from bowels in early stage of disease. No cough.

BRONCHOPNEUMONIA.	CEREBROSPINAL MENINGITIS.	GASTROENTERITIS.
No. 5. Vomiting is uncommon. If at all is due to indigestion from fever. Ordinary vomiting of sour stomach.	No. 5. Vomiting is projectile and out of all proportions to the ingestion of food.	No. 5. Vomiting very marked and is usually the initial symptom. Vomiting aggravated by the taking of food or liquid.
No. 6. Bowels constipated or rather mild diarrhea, caused by intestinal indigestion from high temperature.	No. 6. Constipation the rule.	No. 6. Diarrhea not marked at the beginning. Rapidly developing, becoming a prominent symptom. Movements contain lymphs of undigested proteids, mucus, soapy fat curds and become greenish, thin and foul smelling and frothy from fermentation.
No. 7. Rigidity of neck and chest, without rigidity of extremities. Reflexes undisturbed.	No. 7. Rigidity of body in general, especially of muscles of back. Exaggerated reflexes.	No. 7. Great muscular weakness and limpness of body, reflexes diminished owing to lack of tone of muscles.
No. 8. Pain: Pain in chest, shown by rigidity of chest muscles. Expiratory grunt from pain of inspiration.	No. 8. Pain in head. Shown by scowling, drawn brows, restless rolling of head from side to side, champing or sucking movements, grinding of teeth, irregular movements of eyes.	No. 8. Pain in belly shown by exaggerated peristaltic waves, which are perceptible through thin belly wall. Legs drawn up. Crying when abdomen is handled.
No. 9. Abdomen is hard, but not distended. Rigidity due to abdominal muscles being brought into play, especially if breathing is laborded.	No. 9. Abdomen retracted.	No. 9. Abdomen distended with gas or may be flat, if gas has moved with bowel movements. If distended there is tympany, if flat abdomen is soft and not retracted.
No. 10. Facial expression: Anxious face, nostrils flaring, mouth open, lips blue.	No. 10. Great mental irritability, scowling, drawn brows, mouth closed and jaws rather set.	No. 10. Features drawn and pallid, eyes sunken and lusterless and in severe toxic type picture of "coma vigil."
No. 11. Chest: Large and small moist râles heard over one or both sides with scattered patchy areas of consolidation. Chest findings in young children or infants are indefinite because hard to get without child crying or moaning.	No. 11. Chest findings negative.	No. 11. Chest findings negative.
No. 12. Eyes: Pupils are not affected. Respond to light.	No. 12. Pupils irregular and irresponsive to light. Photophobia. Strabismus neuro-retinitis.	No. 12. In first or toxic stage pupils dilated but respond to light. In later or inflammatory stage pupils return to normal.
No. 13. Microscope: Its findings are of little value except in chronic types where tuberculosis is suspected.	No. 13. Its findings after a lumbar puncture renders the diagnosis positive.	No. 13. Microscopic findings are of but little value, as the intestinal flora are greatly increased with no evidence to tell which, if any, are guilty.

The above symptoms would all be found as early symptoms in a review of many cases. But likely they would never all be found in any one given case. Symptoms that appear early in one case may come late in the next, and the reverse is often true of late symptoms appearing early in the disease. Nevertheless many of the symptoms mentioned would be found in every case, and on them rests our hope of an early diagnosis. But as the disease progresses we have the following picture in bronchopneumonia: A child taken suddenly ill with chills, high temperature, rapid pulse and cough. Fever and rapid pulse continue

for three or four days, with rapid, labored and painful breathing, cyanosis and marked prostration, temperature remittent but not intermittent, râles heard over one or both lungs, with small areas of dulness. However, there are many cases of bronchopneumonia with no consolidation. The dulness given by an enlarged thymus gland may be mistaken for consolidation. The dulness of a thymus gland is found over the upper part of the sternum and may extend one inch to an inch and a half on either side.

In the latter part of cerebrospinal meningitis, quite another picture is present. In this also the child became suddenly ill, with intense headache, vomiting, chills and fever ranging from 101° to 104°, pulse rapid, 120 to 150; respirations but little disturbed, except in character, which are sobbing, sighing with rhythmical irregularity, which may merge into Cheyne-Stokes type; convulsions and delirium rapidly follow. There is opisthotonos, with severe pains down the back of the neck and along the spine; also great muscular rigidity. The delirium is of the active type rather than comatose. The child is irritable and there is a champing and rucking motion of the mouth, restless rolling of the head from side to side and irregular movements of the eyes and hands, with a tendency to turn the thumb into the palm. The posture is very characteristic owing to the opisthotonos. The child can not lie on its back, but lies on its side, with head retracted, spine arched and limbs flexed. The leg can not be extended while the thigh is flexed on the abdomen (Kernig's sign), which late authorities do not consider diagnostic in itself, as it is found in other diseases; but, taken with the rest of the picture, it is valuable. After a tentative diagnosis has been made which is sufficiently positive to justify a lumbar puncture, then the diagnosis with the aid of the microscope is cleared of all doubt.

In the later stages of gastroenteritis: By the fifth or sixth day the child has an emaciated look, eyes sunken, half closed and lusterless, giving a history of having taken suddenly sick with high pulse and temperature, vomiting and a rapidly developing diarrhea, which by the fifth or sixth day has become foul smelling, thin and purulent, movements frequent—12 to 20 times in 24 hours. The movements look green with whitish or yellowish curds and particles of tough casein resembling broken pieces of sweet corn. Soapy fats and tufts of mucus or shiny-looking mucus are present. The acid character of the contents of the bowels causes tenesmus, pain and severe straining, which is relieved temporarily by evacuation of the bowels. The buttocks become excoriated, even with the best of care. The microscope shows numerous intestinal bacteria, and if the cereals enter into the food the iodin test will give the blue reaction of free, unchanged starch. The green stool when due to the cromogenic bacillus is decolorized by the addition of a drop of nitric acid. The green turns to pink, purple or violet if due to biliary salts" (Cotton). It should be remembered in either bronchopneumonia or meningitis with the child's lowered resistance to any bacteria, the gastrointestinal tract is apt to be involved, unless (in the words of Cromby)

"one stands guard before the digestive tube," owing to the great possibility of infection from the food.

I believe there are few cases of bronchopneumonia or meningitis, in the families unable to have trained nursing, where the gastrointestinal tract is not involved to a greater or lesser degree. Then the enteritis may be primary and either of the others may be secondary. All three being infectious, any one may open the way for either of the other two by reducing the child's resistance to infection.

WHEN SHOULD AN OPERATION BE PERFORMED FOR STRABISMUS, SQUINT OR CROSS-EYES IN CHILDREN AND IN ADULTS?*

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Before answering the above question we will necessarily need to inquire into the proper study of strabismus, which embraces not only a study of the act of deviation itself, but of the causes leading up to the deviation, the pathological processes involved in it, and the best methods of overcoming it. What is strabismus or cross-eyes? The word is an old Greek one, meaning squinting. Strabismus is an inability to bring the visual axes of both eyes simultaneously on the one point, the axes of vision of one or both eyes always deviating in a certain direction from the object looked at. It is, on the one hand, the result of errors of refraction, equal or unequal in both eyes, an inequality of the meridional planes of the eyes; on the other hand, it may be due to imperfect inervation, weakness or paralysis of one or more of the extrinsic muscles. Strabismus is divided, according to the direction taken by the muscles, into convergent, divergent, upward or downward. Convergent squint represents about 85 per cent., divergent about 10 per cent., upward, now and then a case, while downward squint is very rare.

Sometimes strabismus is of a mixed variety, as when the convergent form is associated with an upward squint. Strabismus may be confined largely to one eye, but both eyes always participate in it, unless it be traumatic, paralytic or consecutive to other disease. A purely monolateral squint does not exist, except under the conditions just named. Strabismus may be continuous or occasional. From the standpoint of dynamics it may be concomitant or functional, on the one hand, or paralytic, on the other. The terms concomitant and functional are synonymous. In his classical treatise on the "Errors of Refraction and Accommodation," published by the Sydenham Society of London, Donders

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* Read before the Chicago Medical Society, Dec. 16, 1908. For discussion, see p. 341

first brought out the intimate connection of functional convergent strabismus with hyperopia. Donders found that, of all convergent strabismic eyes, 75 per cent. were hyperopic. When one reflects that these facts were suggested before the invention of the ophthalmoscope by Helmholtz, the importance and the classical character of Donders' work may be inferred. It is a well-known fact, amounting almost to an axiom, that refractive error is bilateral and usually approximately equal in each eye, and that, if astigmatism is present or complementary, this is usually in the same meridional plane in each eye of the individual; this occurs in 80 per cent. of the cases of strabismus. We must remember that accommodation is a function of the ciliary muscle, pure and simple; that convergence is an act of the internal rectus and is a complement of and reinforces the act of accommodation. Convergence is an extraocular act, accommodation is an intraocular act. We must remember also that astigmatism and anisometropia are purely anatomical failures, either of the cornea or ocular axis or both. If the concomitant character of strabismus is granted, as evolved by the elder Graefe, by whom this name was given in antithesis to non-concomitant or paralytic strabismus, then the first radical step in the conception of strabismus has been taken, viz.: its character is bilateral and not monolateral; both eyes participate in it; it is not alone a lesion of muscle and nerve, but it is a functional loss of equilibrium due to errors of accommodation and refraction primarily, and assisted in some cases by faulty attachments of extrinsic muscles, or by other anatomical or pathological vices of the orbits.

You will note that there have been two periods of the history of the study of strabismus. The first dates from the teachings of Stromeyer and Dieffenbach in 1838, when squint was recognized as a muscular deformity. Squint was intimated by Helmholtz and elaborated by Donders; by them squint was regarded as an optical anomaly and due chiefly to the hyperopia and the normal habit of convergence, in which an action of the ciliary muscle or the ciliary ligaments is established. Increased nerve-impulse is imparted to the extrinsic muscles or the interni.

In the emmetropic, or the normal eye, all attempts of accommodation are accompanied by convergence. In hyperopia the interni show tractile power greater than that of the external recti; in myopia the opposite condition prevails. Hence it follows that hyperopia leads to inherent strength of the interni, while myopia weakens the interni by nervous stimulation. When binocular vision is abandoned, convergent or divergent squint results; that is to say, when the eyes fail to fix together on one point, the eyes are turned either in or out, as the case may be. As typical divergent strabismus is associated with myopia, so typical convergent strabismus is associated with hyperopia. Divergent squint, however, by exception is oftener found with hyperopia than is convergent squint with myopia.

If divergent squint is a passive act and implies use or disuse, then convergent squint is an active act and implies spasticity and contraction of a muscle and is usually associated with the act of accommodation.

Either theory must carry with it its own therapeutics; the first by purely muscular theory of Stromeyer and Dieffenbach, by operation on the muscles; the second, by the accommodative refractive theory of Donders, by a correction of refractive anomalies.

About five years ago Claude Worth, in the *Archives of Ophthalmology*, 1903, on "Squint" made some characteristic observations on the subject of strabismus. He wrote that squint is not a disease but a symptom. He found that 81 per cent. of convergent strabismus have perfect abduction. When a macula has ceased to be the most sensitive part of paracentral region, or with a point of the extreme periphery, this is called false fixation. He further states, if an eye with a faulty macula be made straight by operation, crossed diplopia is produced. Congenital amblyopia is very rare, which he claims can be checked by stimulating the macula, and, as we know, that is done by putting glasses on so that the rays of light may focus on the retina. He adds that hyperopia is one of the causes of squint, of which the principal one is a partial or total absence of the fusion-sense. In this connection, Landolt, of Paris, has written at great length. In spite of his belief in the theory of Donders, that concomitant squint is a bilateral affection, he writes, forty years later, that our knowledge of the anatomy and physiology of the ocular muscles is still insufficient. He states that in convergent strabismus both external recti muscles have grown weaker, while in divergent strabismus both internal recti have grown weaker. Hence follows an argument for strengthening the weakened muscle of the strabismic eye instead of weakening the deviating muscle; that is to say, he would make advancement of the external recti muscles in convergent strabismus, of the internal recti in divergent strabismus.

He recognizes that tenotomy of the deviating muscle is easier, but argues that it is not physiological. The center of rotation of the eyeball is not fixed, as has been asserted, but is movable; it is due to the resultant effect of all the forces which hold the eye in position and which move it. One of the functions of the four recti muscles is to retract the eyeball, while the oblique muscles draw the eye forward. If tenotomy, or dividing the muscles of a deviating muscle, weakens it, then the oblique muscles increase their power and pull the eye forward so that it projects beyond its normal plane. This is one reason why a tenotomized muscle reattaches itself farther back on the eyeball; another reason of greater weight is that found in the rotation of the eyeball, which displaces the axes of fixation further outwards, away from the vertical plane, by the contraction of the unattached antagonistic muscle.

Projection of the eyeball forward is further increased by the fact that the tenotomized muscle contracts more than its antagonist because the muscle, being detached, only the check-ligaments, or Tenon's capsule, which follow the course of the recti muscle, run toward the orbital margin. Landolt argues that the mobility of the eyeball must suffer after tenotomy, and adds that the success of a tenotomy depends on this loss of mobility. An antagonist never gains as much as a tenotomized muscle loses. By a tenotomy the muscle-cone loses its previous proportions.

and the muscles forming this cone embrace it less than before. On the contrary, advancement of the antagonist forces the eyeball deeper into the apparatus, or the zone of motility; on account of this retraction of the eyeball, advocates of advancement are wont to argue the increase of motility of the eye. The argument is a specious one, though based on well-established physiological laws and well-known anatomical facts; but its author possibly forgets that in a tenotomy of the internal rectus for convergent squint, a certain amount of projection being admitted, three long recti muscles remain whose efforts in maintaining the muscular zone are nearly equal to the contracting power of the internus. The ratio of dynamic power of the rectus externus to the rectus internus is 1:5 or 6, that of the superior and inferior recti is 1:7 or 8. In addition, the power of the oblique to propel the eyeball forward is exceedingly slight. It is also well known that the perimetric field of vision of an eye is but little constricted three or six months after a complete tenotomy of the internal rectus. The excursion towards the nasal limits remains at about 45 degrees, or even more. It is, furthermore, an admitted fact that Landolt, accomplished scientist as he is, performs tenotomy of a muscle oftener than an advancement of the antagonist, for no one recognizes better than he how much more difficult of execution is an advancement operation and how many more important features there are to be overcome in it. The nicest quality of execution in measurement, as well as the most perfect instruments, are required. I fear, if those of us who relied upon advancement, pure and simple, for the rule of our procedure in convergent squint, laid the bare facts to view, it would be found that we sought an accessory tenotomy to complete an otherwise unfinished operation.

I have introduced Landolt's arguments because they were ingenious, were based on physiological principles and anatomical facts, have found many followers, and were published in one of the most scientific and conservative archives of our day. In undertaking the intelligent care of a case of strabismus, knowledge of the insertion of each rectus muscle to the eyeball is necessary. The internal rectus is inserted about 6 mm. from the inner corneal margin; it directs the eye strictly inward. This muscle is the shortest, broadest and strongest of the four recti muscles. The external rectus is inserted about 7 mm. from the external corneal margin; it directs the eye strictly outward; it is shorter than the superior rectus, but larger than the inferior. It has two heads of origin at the common ligament of Zinn, and the foramen lacerum posterius. The superior rectus is inserted obliquely 7½ mm. from the superior corneal margin; it directs the eye strictly upward; it is the longest and the weakest recti muscle. The inferior rectus is inserted obliquely about 7 mm. from the inferior corneal margin; it directs the eye downward and inward; it is shorter than either the superior or external rectus; it is stronger than the superior, but weaker than the external rectus. The internal rectus averages 15 to 25 degrees, the external rectus 5 to 8 degrees, the superior rectus 2 to 3 degrees, the inferior rectus 2 to 3 degrees. The superior oblique directs the cornea of the eye downward

and outward. The inferior oblique directs the cornea upward and outward.

From what has been stated here it will be seen that Donders taught us the intimate relation between convergence and accommodation. We have known that the rational cure of squint is an early correction of the error of refraction; but, owing to the difficulty of accurately correcting errors of refraction in young children, we have usually waited until the child was old enough to assist us by reading the test type. Then it is too late to cure the majority of cases and we are compelled to perform a surgical operation which has yielded fairly satisfactory results from a cosmetic point of view, and in a number of cases the permanent results of the operations are far from idealistic; some cases develop a

Case 1.

divergent strabismus later in life, which is a deformity more deplorable than the original one.

We have learned from the preceding paragraphs that at least 90 per cent. of all children are born hyperopic; we can readily understand that every one is potentially capable of acquiring convergent squint. Therefore, we conclude that there must necessarily be some exciting cause which in a few cases is quite apparent, such, for instance, as paralysis, central chorioiditis, opacities of the cornea or lens, an optic-nerve atrophy, etc.

CASE 1.—At present I have under observation a very intelligent nine-year-old boy, brought to me a few years ago, with a convergent, monocular squint. In the squinting left eye there is a small posterior polar cataract, a corneal opacity, of the eyeball. The left eye protrudes from the orbital cavity considerably more

than the right eye. When the boy was brought to me the father wanted to know whether it would be necessary to have the left eye removed on account of the total blindness and the bulging out of its socket. After careful examination of both eyes, finding normal vision in the right eye and eliciting no complaint from the patient as to pain or discomfort in either eye, I held a consultation with Dr. Martin, who examined this case with me, and we concluded to let well enough alone. A few months ago the boy was brought to the office complaining of severe pain in the left eye, with slight attacks of pain in the right eye. After careful examination of both eyes the child was put under treatment of atropin to be instilled into both eyes three times a day, he was ordered out of school and hot applications were applied whenever he had an attack of the pain. The patient was seen daily for a week, at the end of this period there was present total hyperopia of three diopters. This correction gave 20/20 vision in the right eye and perception of light in the left or blind eye. It was noted that the squint in the left eye under full correction and atropin had almost entirely disappeared. After the atropin had worn off newspaper print could be read with right eye without the aid of glasses; lus 1.50 D. was ordered to be worn constantly and the pain and inflammation had subsided. A 1/2 of 1 per cent. solution of atropin was prescribed, one drop of which has been used once a day for several weeks in the squinting eye, which seems to relieve the pain and congestion and together with the wearing of the glasses partially corrects the squint. The boy is attending school now without any difficulty. I have explained to the parents that the reason the spectacles do not correct the deformity entirely is on account of the cataract and the reason the child can not see with his left eye is because of the opacity of the cornea and the existence of the squint from a very early age, a few months after the child's birth, according to the parents. The parents are also instructed to look out for the danger symptoms of pain and inflammation of the eyes, so that he may avoid if possible the removal of the eye before giving it a thorough course of medical and optical treatment. It is questionable whether even a tenotomy would improve the condition, and the cataract is so small that it would scarcely seem advisable to extract it.

This class of cases is very interesting from a scientific point of view and often baffle our best skill to remedy. It is not the management of such cases that I had in mind in the preparation of this paper. I intended rather to call the attention to a consideration of the ordinary squint, in which both eyes are, except for error of refraction, apparently healthy so far as we can determine objectively and subjectively. In many of such cases we are liable to accept the statements of the parents that the squint followed some slight illness, or that the eye was inflamed or injured at birth or soon afterward and a bandage was applied and when it was removed the eyes were crossed. We are often informed that it may be due to the habit of imitating other children. Sometimes it seems, as Worth teaches, that there is some congenital deficiency of the fusion sense, and that only the suspension of binocular vision temporarily would suffice to destroy it altogether.

These observations are true to a certain extent, but those of us who have observed the development of squint in a large number of young children have noticed that it is not developed quite so suddenly as we are prone to be led to believe, but that it does come on slowly. Many a child is brought to us in doubt whether the child squints or not, and frequently I have to keep the case under observation for a period of weeks before a positive diagnosis can be made. Observers who have had the opportunity of following up a case very closely have no doubt noticed that a child

squints at first occasionally; this may last for weeks, months, or, in some cases, years; then occurs a period of alternating squint lasting a smaller or greater period, which may terminate in a permanent monocular squint, deterioration of vision in the eye that does the squinting.

It is true that there are many cases on record of spontaneous cure of squint, because patients later in life, when being tested for railroad service or pensions, are so often found amblyopic in one eye and they often tell us that they squinted in early life. Among 5,000 pupils that I examined at the State Normal School of Wisconsin extending over a period of five years, from 1891 to 1896, ages ranging from 8 to 30, 150 students were found to have amblyopia in one eye with vision ranging from perception of light to 5/60. The refraction of the amblyopic eyes was not measured.

Case 2.—First photo.

Case 2.—Eyes are straight.

CASE 2.—The patient, who is present at this evening meeting, is a woman, 35 years of age, a seamstress, apparently in good health with the exception of headaches and neuralgia, occasional attacks present since childhood. She presented herself at my office in April, 1907. Examination revealed convergent squint of 45 degrees in left eye, with vision of 2/200. No improvement with glasses. Right eye vision was 20/60, with compound lenses vision equalled 20/40. After performing an advancement operation on the external muscles of the left eye and the fitting of glasses under atropin and prescribing full correction vision in the right eye equalled 20/20, or normal, and the left, or squinting, amblyopic eye, could see 20/80, besides being straight as seen in the second picture. The headache and neuralgic attacks have ceased; there has been noted an improvement in the mental condition in the past year and a half.

CASE 3.—A nervous child, girl, aged two and a half years; vision equalled about 5/200 in both eyes; convergent strabismus or internal squint of both eyes, left eye of a very high degree. Atropin was used for two weeks, and the refraction was measured with the retinoscope, or shadow test, with the following results: right eye plus 4.50 S., vision equal 20/20, left eye plus 7.50 S., vision equal 20/20, both eyes being prefectly straight with glasses on. The tests were made with Worth's ivory balls and an image reflected on each eye separately from the ophthalmo-

scope. This case has been under observation for nearly two years, and the eyes have remained straight with glasses on; they converge slightly without the glasses. The child has improved in general health and has been exceptionally free from attacks of indigestion, from which she suffered before.

The age at which squint first appears has a most important bearing on the treatment, judginb from my own personal experience in a number of cases and in comparing the statistics of other observers, especially of Worth, who presents over 1,000 cases of monocular squint; it appears, beginning in each year of life in the following order—75 per cent. develop before the fourth year, in 178 alternating cases, more than 53 per cent. were noted before the second year; thus it will be seen that, if treatment is to begin, as I believe it should, with the first appearance of the squint, we must commence very early in life.

Case 3.—First position. Left eye turns in without the glasses.

Case 3.—Second position, a few months later. Eyes perfectly straight with the glasses on.

CONCLUSIONS.

We have learned that strabismus depends upon some of the following causes:

First. It is an inability to bring the visual axes of both eyes simultaneously on the one point, the axis of vision of one or both eyes always deviating in a certain direction from the object looked at.

Second. It is on the one hand the result of errors of refraction equal or unequal in both eyes, an inequality of the meridional planes of the eyes.

Third. Or it may be due to imperfect innervation, weakness or paralysis of one or more of the extrinsic muscles.

Fourth. Convergent squint represents about 85 per cent, usually both eyes participate in it.

Fifth. It is a functional loss of equilibrium due to errors of accommodation and refraction primarily assisted in some cases by a faulty

attachment of extrinsic muscles, or by other anatomical or pathological vices of the orbits.

Sixth. Typical convergent strabismus is associated with hyperopia, typical divergent squint with myopia.

Seventh. Ninety per cent. of all children are born hyperopic and are potentially capable of acquiring convergent squint.

Eighth. The rational cure of squint is an early correction of the error of refraction as soon as the diagnosis of squint is positive.

Ninth. It is not advisable to perform a surgical operation on a young child before the age of 5 to 10 unless all non-surgical methods have failed to improve the squint and greatly increase the visual acuity; for, in a number of cases, the permanent results of operation are far from idealistic, some cases develop the divergent squint later in life, which deformity is greater than the original one.

Tenth. Since amblyopia is present in one or both eyes in a chronic case of squint it is advisable (in adults) up to 40 years of age to prescribe full correction under atropin, and after the patient has worn the glasses six months to note the improvement in the squint and in vision and if the results are not satisfactory surgical interference is justified.

Two weeks after the operation is performed the case should again be refracted with and without atropin.

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EYE DEFECTS OF BACKWARD CHILDREN.*

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The increased demands of school life and the rapid advances in educational methods have made the physical well-being of the child a more and more important factor in education. Educational institutions of to-day protect and develop the physical condition of the child side by side with the mind, but the dull and backward pupil who is mentally deficient because of improper functioning of the eyes is more or less neglected. There is no physical defect that interferes with or even prevents the progress of a child in school so much as defective vision and there is no defect so easily and cheaply remedied. Children with defective eyes must be divided into two classes: first, those who are really mentally deficient, and whose defective eyes simply make their condition more pronounced, and, second, those whose minds are normal, but who are dull and backward because of their inability to overcome their eye defects without a great or often impossible expenditure of nerve force. It is for the pupil of this latter class that the greatest efforts on our part should be exerted. They are the children for whom and upon whom especial thought should be bestowed. Within a few years reading

* Read before the Chicago Pediatric Society, November 16, 1908.

was taught by a slow and cumbersome method. Few children enjoyed the reading of a book until the third school year, but to-day this is all changed. By the present methods of teaching reading the child reads simple books at home for his own pleasure before the first year is ended. The loss of nervous energy necessitated by reading and writing at the ages of from 5 to 8 years is an unwarranted drain upon the health of the child. Instead of giving the child the free and vigorous movements of the larger muscles at this age, the use of the smaller ones with their finer adjustments for reading and writing are brought into play.

The sacrifices caused by this premature strain in this age of rush and the influence upon the one organ—the eye—which is abused more than any other, can not be overestimated. Few realize how enormously complicated is the act of reading and how many difficulties must be conquered before the printed word becomes the spoken word, never stopping to consider that all this mysterious and difficult adjustment must be made in early childhood. Imagine for a moment the immense difficulty the young child must experience in learning to direct and control the necessary movements of the eyes in the act of reading. The effort made to follow the printed line from side to side, to fixate particular sentences, words or letters hampered by the inherent physiologic incompleteness of childhood. From observation and examination of a very large number of foreign-born children who frequent the eye department of the West Side Hebrew Dispensary, I am convinced that not only are defective eyes very common, but, owing to neglect, lack of proper food, air, care and hygiene, these defects are much more serious on the average than among native-born. Examine these eyes and you will perhaps find corneal opacities or a congenital cataract or, what interests us particularly, some remediable error of refraction. Place this child in a school where his defects are overlooked and what results? An immense amount of physical suffering, expressed or endured without complaint. In childhood and early adolescence, the plastic period of growth, the eyeball is soft and yielding, and the strain of the ciliary muscle and those of the globe are productive of changes in its shape. The hyperopic eye is the most frequently observed in these cases and the one entirely misunderstood by parents and teachers. Unless the hyperopia is of high degree the child can often read the 6/6 or 6/5 line at 6 meters as readily as the child with normal eyes, and for a time can often read the finest type at 12 inches. This eye, when at rest, has its distance image formed back of the retina, and to see clearly must use its power of accommodation oftentimes much in excess of the amount necessary for the normal eye to accommodate at the ordinary reading distance. When the eye is used for close work there is the usual accommodative effort for the near point, added to the amount already in use for distance. This combined effort is much too great. The ciliary muscle can not keep it up and so the accommodation soon relaxes, the type becomes blurred and the book is dropped. A child with such eyes finds it impossible to keep the print clear, no matter how large, and will finally cease to make any effort, with the result that he fails to keep pace with his fellow-pupils. If such

a child is naturally dull, the inability to study makes the dulness very much more marked.

The high degrees of hyperopia are easily detected, as such eyes can not accommodate sufficiently to get clear distant vision, and, in order to get as large a retinal image as possible, holds the school book within a few inches of the eye. These cases are often wrongly diagnosed as myopia and sent to the ophthalmologist as such. Pass from this type to another where the hyperopia is of low grade and the least easily detected. This is the child who has excellent vision, learns readily and is interested in things about him, but neglects his studies, and his failure to do well at school is attributed to deliberate neglect on the part of his overworked teacher. He begins the day at school well enough, is bright, but has a reputation of being lazy, idle and mischievous. He tires soon of his work and is constantly reprimanded. The difficulty with him is that, while his eyes are keen enough for transient distant vision, his eyes tire after a short application for close work and begin to wander. He can not keep up on account of his inability to overcome his eye defect without a great or often impossible expenditure of nerve force. If he is closely watched each afternoon he has headache, pain or more or less general discomfort in the eyes. Such a child can not possibly have the pleasure in learning a normal child should have.

If we consider eyes normal because a child can see the blackboard from the back seat and read the normal line of the test-type, we are overlooking a large number of children whose eyes are causing them great suffering, for the child with a moderate amount of astigmatism may also by an effort of accommodation, or by partly closing the eyelids, be able to pass the school test, as does a child with normal distant and near vision. In astigmatism the curvature of the cornea is not uniform, being greater in one meridian than in another. Eventually the great effort to maintain this vision soon produces general discomfort, he falls behind in his class, there is a disinclination to study, he hates school and becomes a truant. The backward child with myopia demands the greatest care. Doomed often from childhood in failing to have his childish imagination stimulated by the beautiful things in Nature, his work is bounded by a few inches beyond his nose. He can not see to play the games of his schoolmates, and, though put in a seat close to the blackboard, derives slight benefit from it, and what is seen is obtained only with a strain. Later on, when information can be derived from books, there is an added danger from his myopia becoming progressive. He sees to read by holding the print close to his eyes, but loses tremendously by reason of his defect. The eyes are more or less diseased and consequently become more and more myopic until vision is greatly reduced, and the earlier we can correct the refractive anomalies by the aid of proper glasses the more we shall help their eyes and brain.

Even worse off is the child whose sight is impaired by opacities resulting from disease or neglect. With his distant vision as poor as the myope he has added the spotting and distortion of near objects by the constant shadow of his opacity. He earns a reputation for stupidity,

idleness and inattention and is the butt of his better-equipped mates. Less common than refractive errors, but often dependent upon them, is a lack of perfect balance of the extraocular muscles which make possible the movements of the eyes. Activity on the part of these muscles is excessively fatiguing and any cause which would affect their nerve centers would, in turn, affect the eye movements by which reading is made possible. The backward child with whom nerve exhaustion is the usual condition finds it a task beyond his strength to follow with accuracy and speed the mysteries of the printed page and is constantly losing his place and slipping off the line. Every child struggling with one of the foregoing conditions is working at a disadvantage. The demands of school life are so great that even a normal eye fails, and refractive errors develop, and it is no wonder, then, that the imperfect eye must suffer. I personally have seen many apparently dull and backward children transformed into bright, energetic pupils by the benefits derived from improved eye conditions. The number of dull or backward children with imperfect vision is entirely too great to be accounted for on the ground of mere coincidence.

In view of the fact that investigation showed that 60 per cent. of children examined in the Philadelphia schools had eyestrain or defective vision, the city in 1907 established an ophthalmologic division of the bureau of health. The city council appropriated $300 for glasses for children unable to pay for them, and with this money 354 children were fitted with glasses. These children without glasses could not read from the blackboard and could not see the print in their books; in many instances they were thought backward and often mentally deficient. The correction of these defects by the fitting of proper glasses was followed by remarkable improvement in the work and conduct of the pupils. Children in special schools were enabled to return to the regular schools. Dr. Joseph L. Neff, director of the Department of Public Health and Charities, considers that the report of the first three months' work has demonstrated that many so-called mental defectives and incorrigibles do not really belong in that category. The report emphasizes the fact that the expense incurred is more than counterbalanced by the increased worth of an educated citizen over an illiterate one who may become a public charge, or whose earning capacity is so curtailed that he can contribute but a small amount to the support of the state. Dr. Neff believes that in many cases such children would have joined the criminal classes or in some way have become a burden on the community.

From a study of the subject and my personal experience I would offer the following conclusions:

1. That refractive errors are unusually frequent among backward children.

2. That the correction of these defects by the fitting of proper glasses is followed by remarkable improvement of the mental power and allows the apparently backward child to keep up with his mates.

3. That it would be decidedly good policy to have the eyes of all children with real or apparent mental deficiency thoroughly examined as a matter of routine.

POSTOPERATIVE NASAL HEMORRHAGE.*

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While an annoying or dangerous hemorrhage rarely follows an intranasal operation, it is a possibility which may at any time occur with even the most cautious operator. In order to anticipate and avoid hemorrhage it is the routine practice of some operators to tampon the nostril for 24 hours after any cutting operation, notwithstanding the acknowledged disadvantages of such practice. My preference has generally been to leave the open wound so drainage and cleansing can be secured by the use of hot carbolized nasal douches, repeated several times daily as directed for the first week or so following the operation, in addition to and in connection with such other medication as seems to be indicated.

After removal of polypi and after cauterizations, the danger of hemorrhage is practically *nil,* and in these cases I omit the use of the nasal douche as above mentioned. It is, furthermore, of course, understood that by following the so-called "window resection" operation the use of tampons is invariably employed.

After the cutting operations being considered, there is always for several hours a slight oozing or escape of a thin serous discharge tinged with blood, and of this fact the patient is forewarned. Should this develop into a real hemorrhage, I have for years given the patient verbal advice as to an easy method of packing the nostril, which has generally proven effective. I have also advised the summoning of a near-by physician, should such course seem necessary, as in event of such occurrence immediate assistance is required, and too much time would be lost in waiting for a visit from the operator who, in a large city like Chicago, is generally a considerable distance away. Furthermore, a hemorrhage is most likely to occur during the night, when the difficulty of making a long trip is materially increased, as well as the likelihood of successfully reaching the operator by 'phone or messenger. Additionally any physician called will generally without trouble succeed in rendering the required service.

There may, though, occur at any time a hemorrhage that baffles, for a while, the best efforts of the physician called, who may have never before chanced to have had a case of this kind, and, while he has in his past readings gained a general knowledge of the different methods of treatment advised, owing to his lack of previous experience, he may not call to mind many of the suggestions he has read. If, therefore, he could have placed in his hand a résumé of the literature of treatment, it could not fail to be of service to him. For example, he may have never introduced a postnasal tampon, and, while he may remember all about the Bellocq canula, he may either not possess one, or if he owns this historic instrument it may, owing to the rare call for its use, have

* Read at the meeting of the Southern Branch of the Chicago Medical Society, Jan. 20, 1909.

become mislaid. But, granting he has his Bellocq with him and he undertakes its employment, he may, owing to its size, meet with difficulties in its introduction and use of which the text-books are silent.

As an excessive nasal hemorrhage may be dangerous, and owing to its character the tendency of the patient is to magnify its importance, the imperative call is for prompt relief. With this aim I have prepared the appended "sheet of directions," first giving suggestions to the patient which, if followed, may prove effective, and, secondly, in case of failure upon the part of the patient, to place in the hand of the physician called in such data as will enable him to successfully cope with the trouble without needless loss of time.

This system of giving sheets of directions to the patient for different purposes has been my custom for several years, and I have found it to be of the greatest service, particularly as patients are very prone to forget the details of directions given verbally. I wish to call attention to an improved technic in the introduction of the postnasal tampon.

Fig. 1.—Author's nasal tampon introducer (½ size).

DIRECTIONS FOR THE CONTROL OF NASAL HEMORRHAGE.

Sometimes the application to the nape of the neck of a small piece of ice wrapped in a wet napkin will prove efficient, also ice applied externally about the nose. Peroxid of hydrogen sprayed into the nostril with an atomizer, or even injected therein with either a dropper or a syringe, will at times prove effective. Diluted vinegar, about one part to three of water, used in the same manner, may also be of value.

In cases of hemorrhage see that the neck is not constricted—*a tight collar should be removed.* The simple expedient of applying strong pressure upon the upper lip might be tried. While sometimes effective in a moderate nosebleed, it would probably be of little use in a hemorrhage following a nasal operation. Fainting generally causes a cessation of hemorrhage; therefore, the patient should be kept standing, with head erect, and meantime instructed to take long and deep breaths through the mouth. If, furthermore, the arms are elevated above the head, the blood pressure is diminished. As this position becomes tire-

some, the clasped hands may be held upon the head. To catch the dripping blood, a finger bowl should be held under the chin and not under the nose.

The hemorrhage occurring after an intranasal operation generally requires more active treatment. Plugging the bleeding nostril will usually be found to be the best method to adopt. To plug the nostril a strip of clean old sheeting, ¾ inch in width and about two yards in length, is required. It should be slightly smeared with vaselin. As an instrument for packing the nose a "whalebone," such as were formerly employed in women's corsets and waists, will answer admirably, and is generally available. These "whalebones" are about ⅜ of an inch in width and are both thin and springy. One end of the whalebone is to be placed about six inches from the end of the strip of sheeting, which is then pulled taught on either side thereof, when it can be introduced into the nostril near its floor to the extent of about four inches from the tip of the nose, after which the whalebone is withdrawn. A second loop of the same length in the strip of sheeting can now be taken, using the whalebone as before, and introduced into the nostril just above the first packing which should meantime be steadily held with the other hand by pressing the protruding end thereof against the upper lip, so the introduction of the second packing will not disarrange the first. In the same manner additional packings should be introduced until the nostril is well filled. While the first two packings are directed backward and downward, the succeeding packings should be directed higher and higher until the last one is directed upward, or parallel with the outer line of the nose.

While for the first two packings a six-inch loop is required, the succeeding loops employed can be gradually shortened until finally a loop of only three or four inches in length is sufficient. In this way as many as a half-dozen packings may be employed, or until no more can be introduced. After the nostril is thoroughly packed, the protruding ends of the packings can be cut off with a scissors for the patient's convenience. If after this any hemorrhage continues, it is generally either because the packing has not been well done or else from bleeding rearward into the throat.

If for any reason the hemorrhage has not been controlled, a near-by physician should be called in to whom this sheet of directions should be handed. After removal of the packing already introduced, he will probably be able to repack the nostril in an effective manner. He may elect to introduce a postnasal plug before the introduction of the anterior packing. The best method of doing this is by the use of a small-sized hard rubber Eustachian catheter, the shape of which can be changed as desired by holding it briefly in hot water. After proper shaping, there should be passed through the catheter a delicate tape, or else a string, which should be about one yard in length. The catheter can be easily threaded by first passing through it an ordinary steel piano wire (about No. 4), the distal end of which is abruptly bent upon itself so as to form a loop, through which one end of the tape is next placed.

so each loop is about ½ inch in length. By traction upon the wire at its opposite end the loop can be made to enter and thus the tape is drawn through the catheter until the point of the catheter is at the middle thereof. Linen tape ⅛ inch in width is to be preferred.

Should an Eustachian catheter not be available, a very fine Nélaton soft rubber catheter will do, the tape being threaded therein as before described, or else the middle of the tape can be tied about the catheter at its opening. Before introduction the catheter and tape should be sterilized by the use of a 20 per cent. solution of phenol, followed by alcohol. When thus prepared the catheter can be passed through the bleeding nostril near its floor until the tape appears back of the soft palate so it can be grasped with a forceps and pulled out of the mouth. The tape is now held at its middle and the catheter is withdrawn from the nose. In this way a double tape about 18 inches in length reaches through the nose and out of the mouth. While this length may at first seem oversufficient, it permits of the required manipulations without danger of its being lost in the nose. The free nasal ends had better be secured with an artery forceps. The next step is to cut the tape in two at its middle and knot the two tapes together about 8 inches from the point of division. Next a suitably sized and shaped postnasal tampon of iodoform gauze should be firmly secured with a second knot, after which one of the ends of the tape may be cut off. In this way a handle of tape is provided to assist the finger in the proper placing of the tampon by pushing it back of the soft palate while suitable traction is applied at the other end of the tapes. Thus after the tampon is located the tapes lie on the nasal floor. While still applying traction to the tapes the nostril may be plugged anteriorly, after which the two ends may be securely tied about a roll of gauze which closes the anterior naris.

In rare cases the other nostril will have to be similarly plugged. If the anterior nasal packings are well applied, the hemorrhage should be fully controlled. The postnasal tampon should not be allowed to remain more than 24 hours, and is easily removed (without disturbing the anterior packing, if desired) by first untying the nasal ends of the tapes, so as to free the roll of gauze, and next by moderate traction upon the other end of the tape, which has meantime been hanging out of the patient's mouth and secured to the ear with a bit of plaster.

A word may be added regarding the introduction of the anterior packings. While under directions to the patient the use of clean old sheeting has been advised, because it is always available, it is, of course, apparent that either gauze or absorbent lint would be better, and will probably be selected by the physician called in in place of the other. If gauze be employed, it had better be in strips one inch in width and about 9 inches in length, and either nosophen or iodoform gauze is to be preferred. If linen is selected, being much thicker, the strips should not be more than ⅜ of an inch in width and of similar length. In place of a whalebone a suitably shaped introducer, as shown in cut, can be better employed. Cotton as a nasal packing is not to be selected. Care should

be taken that the nostril is not packed too tight so that pressure might devitalize the mucous membrane.

Moistening the packings with peroxid of hydrogen might be mentioned, though in my experience, as before suggested, vaselin is to be preferred. In fact, grease is so often of value that a suitably shaped plug or tampon of ham fat has been advised. I would respectfully suggest to the physician thus called in the advisability of giving one hypodermic of morphin, preferably a maximum dose. Two or three 20-minim injections of aseptic ergot, or ergotole, are also of value, partially due to the nausea thereby induced. For this latter reason Norwood's tincture veratrum viride, administered hypodermically (say 5 to 10 minims), has been advised, it being also, like morphin, a cardiac depressant. The relaxation from vomiting will often prove effective. With this object the hypodermic administration of 1/10 grain of apomorphin has been employed. Bosworth recommends an emetic of zinc sulphate. As cardiac depressants and relaxing agents are chiefly indicated, it becomes apparent that alcohol in any form is to be avoided, as are also hypodermics of strychnia, atropia, etc.

When convenient so to do, astringents applied directly to the bleeding area are often effective. For this purpose a small gauze packing well moistened with a paste made by adding powdered tannin to a 20 per cent. solution of antipyrin might be suggested. Another paste which has also been recommended is made by adding 4 per cent. of vaselin to powdered permanganate of potash. As with the previous paste mentioned it should be applied with a gauze packing. As a further alternate the gauze may be moistened with compound tincture of benzoin, to which iodoform has been added in the proportion of one dram to the ounce of the tincture.

Styptic collodion, which is a combination of collodion, alcohol and tannin, is another agent which has been employed in the same manner. If the area of bleeding is well forward, of not too large size, and easily reached, the introduction of a Bernays-Simpson tampon may be selected in place of gauze. Before being introduced it should be smeared with vaselin. As it swells it will cause pressure over the area it covers. One writer has suggested a 2 per cent. solution of chloroform in water. A small pledget of gauze, well moistened therewith, can be packed over the bleeding area.

Adrenalin, 1-1000, would naturally occur to one as a proper agent to employ. In my experience it is more efficient in preventing hemorrhage than in stopping it after it has begun. In its use there is also danger of a recurrence owing to its secondary effect. If employed at all, the best method is to inject hypodermically in the upper lip on the bleeding side ten minims of a 1-2000 solution.

A particular caution I would give is to not introduce into the nose Monsel's solution or any other astringent preparation of iron. Through their use either sinus or middle-ear trouble may be induced. The value of ferropyrin for the control of hemorrhage has been highly extolled.

It is a dry powder consisting of equal parts of the chlorid of iron and antipyrin. It is applied to the bleeding area upon a small pledget of cotton or lint. Owing to the previously mentioned objections regarding the use of iron in the nose, other methods of treatment are to be preferred.

Douches of hot water directed against the bleeding area have been employed. With the many other and better methods of treatment available, the hot douche is mentioned chiefly because it is so commonly recommended in text-books. Furthermore, as the physician hastily summoned may not be provided with means for following out the course which, in his mind, is chiefly indicated, it is wise to mention any additional methods of treatment which have been suggested and which may be tried pending the delay in getting the particular things most desired. If the hot douche is employed, it for different reasons had better be a 1 per cent. solution of carbolic acid (practically one dram to the pint)

Fig. 2.—Author's nasal irrigation tip (full size).

and should be of a temperature gradually raised from 105° to about 130° Fahr. It can be best carried to the point of bleeding by the use of an oval nasal tip, as shown in Figure 2. The fall from the fountain syringe should not exceed two feet. If preferred, in place of the carbolic acid, alum may be substituted, using about two drams thereof to the pint. Turpentine and creasote, used in a similar manner, have also been advised.

Should the hemorrhage have been very free and uncontrollable a bandage placed tightly about each limb near the trunk will diminish the amount of blood in circulation. If this is done, one bandage at a time should be released, so the circulation of the limb will not be too long obstructed. In this way three limbs can be kept distended with blood.

The chlorid of calcium, given by mouth or rectum in doses of 10 grains dissolved in two ounces of water, and repeated hourly for three hours, has been employed with benefit in case of persistent and oozing hemorrhage. After the third dose it should be discontinued for a few hours before being again used. Forty to 60 grains in 24 hours is regarded as the maximum dose as an antihemorrhagic. The lactate of calcium has also been advised, a single dose of 30 grains in water being given.

Should the hemorrhage have been very severe it is advisable to administer either a full enema (½ gallon or more) of normal saline solution or else the subcutaneous injection of the same fluid into the cellular tissue at the most favorable point, being the treatment known as "hypodermoclysis."

103 State Street.

A NEW METHOD OF PACKING THE NOSTRIL.

W. E. CASSELBERRY, M.D.

I wish to use this occasion—that of a discussion on the treatment of postoperative hemorrhage—to make a preliminary report on a method of packing the nostril, which I originated about three years ago, under the stimulus of a pressing need in practice for a reliable and harmless preventive of postoperative nasal hemorrhage. I commend the expedients of the essayist, especially the recommendation to supply the patient with a sheet of written instructions to govern his action in the event of bleeding, and I formerly handed him also the materials ready prepared for self-introduction, of the sort of gauze tampon which Dr. Ingals has described. Now, however, in place of this uncanny precaution, I regularly introduce as the last step of the operation, my new preventive tampon.

The packing of the nostril, including the insertion of a plug in the posterior naris, is at times an absolute necessity in order to control the most dangerous type of postoperative nasal hemorrhage, that which is liable to ensue from cutting a branch of the postnasal artery, as, for instance, in making a full length turbinectomy or in the radical ethmoid operation. The superior efficacy of the posterior plug over an anterior pack used alone is due to the ring-like conformation of the choana, against the bony edge of which the main vascular stem as it emerges from the pheno-palatine foramen, together with its larger branches, is certain to be compressed by any plug which firmly fills the choana. But the painfulness of the customary manner of packing with gauze, especially in connection with a posterior plug, the disposition of gauze to adhere so intimately to the wound as to preclude its removal under forty-eight hours without causing hemorrhage anew and the liability especially of the postnasal plug to cause abscess of the ear, have deterred many from using any sort of pack for the purpose only of preventing hemorrhage and have deterred all from inserting a posterior tampon excepting to meet an urgent necessity.

It is obvious, therefore, that a preventive tampon of a form which, while affording safety from hemorrhage, shall be in itself safe, and which, though inserted from in front shall embrace the merits without the demerits of the posterior plug, would serve to extend the benefits of nasal surgery and to lessen the anxieties of the nasal surgeon. Impelled by feeling my own anxieties in this respect to be quite disproportionate to the minor character of most of the operations performed, I devised a new method of packing the nostril and posterior naris, which I have used with satisfaction during the last three years, having found it to be a simple, safe and effective method, the materials for which are commonly available. The tampon is composed of a rubber finger cot or preferably as now perfected in shape, of what might be called a club-finger cot, which, after insertion into the nostril, is filled by means of a tubular packer with a strip of sterile gauze 1¼ inches wide by a yard or more in length. The finger cot and packer having been sterilized by boiling, the packer ready armed with gauze, is used first as a stem on which the rubber case, lubricated and held for the moment lengthwise on the stretch, is carried into place in the nostril. Both the packer and cot are then in position to pass the gauze, which at the start should be packed with special firmness, in order to form the posterior plug by an overdistention of the closed end of the finger cot where the rubber is reinforced to withstand the strain. The club-finger cot with its bulbous closed extremity and proximal slight constriction of its caliber is especially suitable for forming such a plug in and behind the posterior naris, but a large size ordinary finger cot or one cut from a surgeon's rubber glove, can be made to serve the purpose almost as well by the exercise of judgment in placing and filling it. Not only are the insertion and withdrawal of this form of tampon compartively free from the pushing and pulling requirements of gauze alone, but its smooth surface permits of ready detachment from the wound as soon as its purpose is fulfilled, usually by the end of 18 hours, instead of 48, when by first withdrawing

the gauze from the rubber the flaccid case will slip from the nostril. While the presence of any tampon in the nose for a couple of days or more is a great hardship, as well as a menace to the sinuses and ear, the discomfort of this tampon for a single night is well tolerated, as the patient can feel assured of its removal the next morning; and as it resists putrefactive changes, being for the most part non-absorbent, I believe its use for this brief period to be entirely free from danger of infection of the middle ear or nasal accessory sinuses.

It remains, then, to speak further only of its efficiency, which no doubt will be found to vary, as with other tampons, in accordance with the degree of compactness and also dexterity with which it is inserted. I have personally employed this form of packing in from 50 to 60 private cases, having adopted a routine of inserting it as a precautionary measure, immediately on the completion of all intranasal operations of the sort which experience has taught, are prone to a continuance or recurrence of hemorrhage during the first day and night. Of this number, including turbinectomies, septum and sinus operations which ordinarily would have given occasion for several night calls to stop hemorrhages more or less severe, in only one did the tampon fail of its purpose, and then for the reason that, in order to minimize the discomfort, the packing had been left too loose. The bleeding in this case, which commenced about four hours after a full length inferior turbinectomy, was profuse and proceeded from far back in the nostril, having been, therefore, of the type which is best controlled by a posterior plug. It was this incident which led me to perfect the plain finger cot then used, into the club-finger pattern in order that its bulbous extremity when overdistended with gauze might compress the posterior vessels against the ring-like boundary of the choana and thus exert the same pressure effect as a regular posterior plug, a preventive pressure which is especially indicated whenever this type of hemorrhage is to be anticipated.

The primary purpose for which I devised this new method of packing the nostril, and for which I now recommend it, is to serve as a preventive of hemorrhage rather than to control a vicious bleeding when already in progress. Not being equal to free gauze in coaptability to a highly irregular surface, nor in extreme power of compression, one can see that it might not be capable of stemming the tide when in full flow; nevertheless, I confidently expect that in the majority of cases experience will prove it to be capable of control as well as prevention.

REPORT OF THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.*

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Mr. President and Members of this Society:—There is a trite saying that "All work and no play makes Jack a dull boy." Assuming that this is true, perhaps it may lend zest to the interests of our society meetings to have now and then a paper that can not technically be called scientific. With the preceding thought as a suggestion, and at the request of the secretary, I have endeavored to combine and reduce to writing some facts relative to earlier views on tuberculosis; the necessity for interest in and the results obtained by the holding of international congresses for the purpose of still farther studying the question in all its varied phases, for they all directly or indirectly affect man's

* Read before the Stephenson County Medical Society.

health, happiness, well-being and wealth; the significance of the assemblage in this country; what it means to the American people, because of the position that this nation now holds in the eyes of the world; the official national attitude toward the congress primarily and latterly; the local arrangements and the efforts of those directly responsible for the success of the congress, and the exhibits and displays on the floors of the New National Museum Building, Washington, D. C., where the sixth and last International Congress on Tuberculosis was held during the latter part of September and the first part of October. The first International Congress on Tuberculosis was held in London, England; since then France, Russia, Germany and Austria have each enjoyed the honor of entertaining the assembly, and the seventh congress will be held in Rome, Italy, in 1911.

In some manifested form tuberculosis has existed since the earliest history of medicine; Hahnemann used the term *psora* to signify a hydra-headed miasmatic source from which he says sprang seven-eighths of all chronic diseases, and owing to its highly contagious nature there were few who escaped it; the manifested forms of which were called scrofula, rickets, atrophy, marasmus, consumption, pulmonary consumption, tabes, laryngeal phthisis, etc., according to bodily constitution, defects in education, habits, employment and circumstances, as also modified by the various psychical and physical impressions; the other one-eighth, he said, were chargeable to two other miasms, syphilis and sycosis, thus making three sources from which all chronic diseases sprung, but that there might be a combination of any two or even all three causes. Phthisis is a Greek word and was used to indicate a flesh-wasting pulmonary disease. The term tuberculosis was first used by the German professor, Schöenlin, in 1839, only about nine years after the advent of Hahnemann's miasm psora. The word tuberculosis was considered by Klebs an unfortunate term, because it does not always imply tubercle and, therefore, is misleading. Whitaker says that, up to 1878, tuberculosis was considered a secondary trouble and incident to any inflammatory condition, and that the possibility of individualizing the different manifestations was as hopeless as the possibility of curing it. Koch, in 1882, discovered the specific germ that for all time to come puts the stamp upon the tuberculosis of to-day as a miasmatic disease and, therefore, classifies it as a trouble equivalent to if not identical with psora. In accordance with the pathologist, Virchow, we have the manifested effects of psora, discrasia and tubercle practically inseparable so far as their being causative identities in producing symptoms significant of disease.

The exact mode of entrance of the tubercular miasm into the system is still in a speculative condition. Quoting from Osler's latest work on practice, he says: "Baumgartner and his followers assume that the tubercle bacilli can lie latent in the tissues and subsequently develop when, for some reason or other, the individual resistance is lowered. and explains the lack of development of the germs by the greater resisting powers of the tissues of children." We are alive to the fact that the

assiduous research efforts of all of these great, wise and progressive men have helped a comprehensive ray of causative light relative to the origin, nature and effect of chronic diseases in the human organism. In the treatment of chronic medical diseases, especially of tuberculosis, which stands at the head as a thwarting demon of man's physical existence, we are, after all, compelled to concede the necessity of taking into consideration the uncertainty of an unknown quantity, viz., metabolism; this we are ever called upon to deal with in etiology, pathology, treatment and even in prognosis; it is when we recognize this unknown quantity, and only then, that we are in the best position to realize why those that have gone before have left so many problems medical still unsolved and make the necessity of constant investigative efforts so strikingly apparent to us.

The necessities for prompting and holding international congresses to consider the question of tuberculosis are its increased prevalence, due to neglected sociological and hygienic conditions; the stimulus that such gatherings produce on the impressionable minds of those that are susceptible and stand in a position to obtain more positive knowledge of the subject in all of its phases, and the awakening produced on the public mind in general as the world's authoritative mind speaks in unison. Since it has been demonstrated that this affliction can and will be the death of nations unless steps are taken to control it, and, further, since old-time conclusions relative to the curability of the disease have proven to be erroneous, it is left to the scientifically disposed and those ambitiously interested in suffering humanity and longevity of life to proceed with stoicism against this common enemy that thrives under insanitary conditions in all of the various countries on the earth's surface. There seems to be no climatic boundary, for the ravages of this disease are felt equally as keen in the tropical countries of the south as in the countries of the frigid zone in the north. Not even constant and moderate temperature in the bowels of the earth seems in the least to modify the onward march of this grim warrior when once he has, in one form or another, assailed his victim. A number of years ago a tubercular colony was established in one of the chambers of the Mammoth cave, where the temperature rarely varies more than one or two degrees in the course of a year. They were sustained under the most favorable dietetic provisions. For a time they were extremely hopeful and not until a number of the colony succumbed to the life-destroying malady was the hope of the survivors abandoned. Of course, in this experiment two practically demonstrated great essentials were sacrificed, viz., light and oxygen-laden air. Not only has more modern science accurately theorized that light and oxygen are a positive necessity, but experimentation has proven that without them the consumptive is doomed, for neither high, dry nor rarified atmosphere or an even temperature can save the consumptive. It took science hundreds of years to learn all that we know relative to tuberculosis, and hundreds of thousands of lives were sacrificed under the early theories in the climatic experimentations. Even now the greater portion of the general public and a goodly number of the profes-

sion are still laboring under erroneous ideas in regard to this matter of climate for the successful treatment of tubercular subjects. There is a ray of hope that through the holding of international congresses their educational influence will help to penetrate this dense blanket of false presentation of the subject, thereby revealing the real essentials in the treatment of this affliction that it may be presented and accurately understood and wisely acted upon by the afflicted and those that directly control them.

That there may be virtue in a wisely selected climate for consumptives no careful investigator doubts; but there are so many contingencies that must be taken into consideration it behooves a medical man to be extremely chary of his advice to tubercular subjects on this question. These international congresses do not aim to deal simply with the finished product, as it were, but they aim to consider the problem from its earliest and most remote cause, and, while errors may have crept into their deliberations both as acts of omission and commission, they are but the natural outcome from the imperfections in the operation of human reasoning. There was a time when the treatment of tuberculosis was not considered from the standpoint of a contagious or infectious disease, but as a purely hereditary trouble. When a family were once looked upon as being afflicted with the malady it was considered that they would succumb to it as they reached that doomed certain age or period of life, no matter what form of heroic treatment or climatic change might be adopted for them; if they escaped the appointed time, however, they were to be congratulated as being most fortunate, indeed. Now, we know that tuberculosis originates from a miasm, that it is both an infectious and contagious disease, and that it may be transmitted by any of the ordinary routes of conveyance of such disease-causing factors; that the specific morbific agent which causes it is more tenacious to life and capable of proliferation under much more unfavorable circumstances than most any other morbific agent, and that, while it has a selective and distinctive affinity for certain tissues of the human body, yet there are no tissues but what will tolerate its presence, and with favorable idiopathy may even become hot beds, under certain unhygienic circumstances, for a rapid proliferation in the process of development.

There are no individuals but what may feel temporarily the clutch of this great life destroyer under negligence of proper hygienic surroundings. Careful scientific investigation has demonstrated that all deaths that occurred after the thirty-fifth mile-stone of life had been reached bore the mark in some one of the tissues of the body of having been infected with tuberculosis. We know that the question of the development of tuberculosis in families is not the transmission of a specific germ life, but the quality of soil, as it were, that has been inherited. In this idiosyncrasy of the individual is to be found the resistive force against the invasion and development of disease; here psychology's climax may be reached, for in the conception of mental and physical life are laid the foundations for the individual's resistive forces; under the strain of popular opinion, based on the faulty reasoning of inherit-

ancy, human beings may sink to the lowest ebb of resistance against the invasion of morbific germ life, all physical resistance yields under this mental persuasion, and the product of conception under such circumstances is a hot bed, when once infected, for the breeding of morbific agents that tend to destroy human life; while, on the other hand, the product of conception under proper mental and physical hygiene assist in developing mental strength and determination, thereby increasing physical resistance, and tending largely to check susceptibility to the invasion of morbific agents in the tissues of physical man.

The standard and popular opinion in the medical profession of foreign countries is not radically different than what we enjoy at home, and, while some of the purely scientific questions on tuberculosis have been more dexterously handled by some of our professional brothers across the sea, there are none that can compete with some of our home men in handling the question from a successfully practical standpoint. When a little over two years ago the question of entertaining the International Congress on Tuberculosis in this country was discussed before the joint session of the American International Congress on Tuberculosis and the Medicolegal Society of New York at the Hotel Astor, it was under the sanction of the United States government and was for the formation and urging of legislation to prevent tuberculosis. Governmental statistical reports of the death rate from tuberculosis in this and many other countries had attracted the attention of officials high in governmental affairs. The prominence among the first nations of the world to which this country had risen within the last few years, and the appalling mortality rate that tuberculosis has reached in the statistical area of this country, made it seem fitting that the next International Congress on Tuberculosis should be held in the United States. Accordingly officials were elected at this joint session to begin the prodigious task of preparations for entertaining the congress. Dr. John S. Fulton was chosen as secretary general, and after spending two years of his time ceaselessly in the task completed his work with great credit to himself, satisfaction to the profession and honor to the country. This great preparatory work was accomplished only after many ponderous obstacles were overcome. The Congress of the United States primarily and individually favored the International Congress, but were opposed to a national recognition and financial support. After much concerted labor on the part of those interested in the success of the international congresses, and after a pledge not to ask financial aid from this government, the goal was finally reached and the International Congress secured national recognition and was permitted to issue invitations to foreign countries to send national delegates to the International Congress on Tuberculosis in this country.

As the congress had been entertained at the capitals of other countries and with national recognition, it would be only fitting that they should be entertained at the capital of this country. So one of the next great obstacles to overcome was to secure suitable quarters to house the congress and their exhibits that it might be a credit to this country in

the eyes of foreign delegates. With the exception of the capitol building, there was but one building in Washington which could properly house the congress, viz.: the Congressional Office Building. This building is under the control of the House of Representatives, and the consent of each United States representative must be secured singly in order to procure this building. To those that have had occasion to request busy congressmen to consider matters not directly appertaining to national affairs of the government, matters where finances or huge trusts are involved, or their election, know how difficult it is to secure their attention. Fortunately for the International Congress on Tuberculosis there was in Washington being erected the National Museum Building, which by the time the congress was to meet would be so far complete as to make it possible for the congress to occupy it, and while, although under course of construction for a period of two years, it had none of the artistic touches of a complete structure, such as the International Congress had been entertained in in foreign countries, it was, however, accessible, convenient and its capacity adequate.

Dr. Fulton's eventually well-laid and worked-out plans for the success of the congress consisted of a local committee to look after the local arrangements, besides committees that were appointed from each state of the Union; the governors of individual states were asked to consider the matter singly and to appoint delegates to the congress; members of the medical profession that were interested in national and state medical societies were solicited and urged to take an active part in the work, especially in the way of securing active members.

At the opening of the congress, forty-six foreign countries were represented by officially appointed delegates, and the active membership list reached the 6,500 mark, while at the meeting in Paris, three years ago, the active membership list reached only the 3,500 mark. The most extensive foreign exhibit was from Germany, while at home the New York State exhibit exceeded any other. The exhibits, any section of which was a worthy study of no mean value to either a professional or layman, consisted of charts showing the topography of country, both local and general as it might naturally appear, indicating the favorable and unfavorable selections of building sites for residences and outbuildings for stock and milch cows, together with models for the construction of residences and out-buildings, that their ventilation might be the most complete and perfect and the least liable to retain or convey tuberculosis; models illustrating the construction of public buildings, city residences, tenement houses, sanitarium buildings for the treatment of tubercular cases; carefully prepared specimens in jars of preservative fluids, to retain the most natural appearance, of thousands of different parts and sections of the bodies of man and animals, showing not only the earliest signs of tuberculosis in organs and tissues of the body, but the far-advanced stages in the ravages of this disease. Instructors were in attendance at many of the exhibits, and lectures were given from time to time to the laity as well as to the profession, different systems were demonstrated under varying environments, showing

how under adverse circumstances one might still acquire or retain sufficient resistive force to avoid the development of tuberculosis.

The question of human contamination from the bovine tubercular bacilli was hotly discussed, and Prof. Theobald Smith, of Harvard University, wrung from the immortal Koch, who has up to the present time contended that man is not susceptible to the bovine tubercular infection, in a semi-private seance at the Willard Hotel under date of Oct. 3, 1908, an acknowledgement that his experimentations and demonstrations, too, had proven that man is susceptible to the bovine tubercular bacilli, but that at the present time a public acknowledgement of the fact would be disastrous to himself and his relations to the German government, and that if the matter was to be pressed to a finish he would absent himself from the congress rather than make a public statement of that kind, as it meant so much to Germany, as at the present time their meat products have been prepared under his former idea, and that if he should now renounce his former views and proclaim the views of Professor Smith it would balk the home German meat trade and they would demand American meat, as that is prepared in accordance with the findings and demonstrations of Professor Smith.

Professor Detre, of Budapest, asserted and proved by actual demonstration, before the class of scientists (Professor Koch included) in the Washington Tubercular Hospital, that tuberculosis contracted by a human being from the bovine was distinguishable from that contracted from man, as cases of bovine origin reacted only on bovine tuberculin test. Dr. M. P. Ravanel, of Madison, Wis., and Dr. F. Arloing, of France, were among the warm pursuers of Professor Koch on this question, contending that bovine tuberculosis could be conveyed to the human, and in such cases the lymphatics, bones, joints and peritoneum are likely to be the seat of infection, while pulmonary consumption was more than likely to be from the human tuberculosis.

The average attendance at the general assemblies, subdivisions, lectures and demonstrations was about 6,000 a day during the official congress. The actual expenses of the congress amounted to about $160,000.00, and, outside the thirty-odd thousand dollars received as membership fees, the balance was made up by philanthropically inclined individuals of this country. Dr. Lawrence E. Flick, of Philadelphia, was one of the most liberal subscribers to this fund and there are many others who, realizing what the annual death rate of 160,000 individuals from consumption means to the American people and this country, and that if we desire to maintain the standing that we have acquired among the nations of the world, it behooves us to be even in advance of the efforts of all other nations to save the lives of our country's subjects and to be abreast of all people in scientific investigations, especially where the health of the nation is involved.

As an incentive to the highest type of scientific papers, lay presentations of the subject, preventive work actually being accomplished by institutions and the best exhibits, attractive rewards were offered. Besides $5,700.00 as cash prizes, more than one hundred gold and silver

medals (worth several times the cash amount) were selectively given from a meritorious standpoint, determined by the committee in charge. Some of the subjects on which competitive awards were bestowed were: the best plans for the prevention of tuberculosis; the best evidences of effective work in the prevention of tuberculosis; the best exhibit of an existing sanitarium for the treatment of tuberculosis among the working classes; the best dispensary for the treatment of tuberculosis among the poor; the best exhibit of a hospital for the advanced cases of pulmonary tuberculosis among the poor; a tract on the plain facts about tuberculosis, and numerous other leaflets and tracts treating of different tubercular topics; the best exhibits illustrating different phases of the invasion and effect of the tubercular bacilli in the tissues of the body; the best effective organizations in preventing the spread of tuberculosis: the most effectual treatment in the different phases of tubercular infection, etc.

Needless to say that the United States competitives carried away many high awards and honors, as at the present time the people of no nation are making such heroic efforts to care for cases of tuberculosis or prevent the spread of the disease. The official representative of the Chinese government did this country the honor, in his initial address at the opening of the congress, to say that, "owing to the accomplishments of the American people from the educational standpoint and from actual results obtained in the treatment of tuberculosis, his countrymen were looking to the United States as their succors from the destruction of their nation by this affliction, as there are no people on the face of the globe who have a greater per cent. of tubercular subjects among them than the Chinese."

The active membership fee in the International Congress on Tuberculosis has always been $5.00 and the transactions have been supplied when published to all active members without further expense to them. The published Transactions of the Sixth International Congress, which will consist of five bound volumes, will now sell for $20.00. Deliveries will begin in February or March of this year, and I feel that all who became active members are to be congratulated, as no other publication will ever contain so vast a treatise on every phase of tuberculosis, and for years to come no publication on this subject will probably be compiled or written by a greater number of recognized authoritative authors of the world.

LA GRIPPE AND ITS COMPLICATIONS.*

JAMES W. DUNN, M.D.
CAIRO, ILL.

La grippe has continued to appear every fall, winter or spring since its advent in epidemic form in 1889. Prior to that time, for a great many years, it was known to exist on the steppes of Asiatic Russia and

* Read at the December, 1908, meeting of the Alexander County Medical Society.

other places in the old world. Before the date given, we had in this country occasional attacks of influenza during the winter months, but it was never of that severe epidemic type that familiarized the American continent with the term "la grippe." It was supposed to be due to climatic conditions then. When the first epidemic came, various theories were advanced as to its cause in that form. About the most popular was the one that had its origin in the statement that the earth was passing through the tail of a comet, or had encountered in its travels through space a cloud of stellar dust. The theory of the microbic origin of disease was not nearly so popular then as now, so that successive epidemics occurred before the real cause of the trouble was found. Finally its microbe, the *Bacillus influenzæ*, was discovered. Very rapidly this discovery was verified throughout the world, so that soon all doubts on the subject were dispelled.

Among its peculiar features I may mention the fact that it seems to have a ferret-like ability to select weak spots, especially of the nervous system. According to observers, it is paresis of the nerves supplying the different organs of the body that causes the gastrointestinal, the meningeal or the pulmonary complications. A second feature is its greater prevalence during relatively warm and moist weather, though it may not be entirely absent in dry cold weather. The only other peculiar feature that I wish to mention is its strong tendency to relapses and to complications. The complications referred to here are not those from involvement of the different organs of the body, but those from streptococcic, staphylococcic and diplococcic infection.

The diagnosis is easy sometimes; difficult at others. If grip is prevalent, and we have a case that gives a history of a slight chill or chilly sensations, catarrhal symptoms of the upper air passages, slight fever, cutaneous hyperesthesia, and great muscular pains, we are apt to have a patient with this disease. But we want to be sure. Then the microscope can make us almost positive—about as positive as when we find the Löffler bacillus or the bacillus tuberculosis in the sputum. The recognition of the *Bacillus influenzæ* is said to be fairly easy. But a great many will wish to make the diagnosis reasonably sure without the aid of the microscope. Then to the symptoms given add these: a red stripe on the anterior surface of the soft palate. The stripe is dark or bluish-red, about 4 mm. in width, and presents the form of a rainbow, only it is not complete above, being interrupted by the base of the uvula. It is never complete on this. To this add a granular condition of the soft palate, the granulations appearing as small whitish projections like so much sand sprinkled on the surface. To this add also the swelling of the papillæ of the tongue, especially at its anterior end, and the quite frequent enlargement of the spleen. With all of these conditions you may make a diagnosis of la grippe. If a sufficient number of these are not present or well-marked, reason by exclusion, and so come to the safest diagnosis.

I will touch upon the subject of its general treatment before taking up its complications, as the treatment of its complications will not be

covered by this paper. Notice I said "touch upon the subject of its general treatment." I did this advisedly. No specific for the disease having been discovered, we are left to treat the same on general principles and symptomatically. That means that each physician has his favorite line of treatment. Mine is salol, salicylate of sodium, phenacetin and a laxative in capsules. This to equalize the circulation, control the pain and arouse the emunctories. Try to control the patient and to prevent complications. I do not defend this treatment particularly. I do not say it is the best. I use it because it seems best to me. One other point: La grippe is infectious and contagious. Use a little prophylaxis, if possible. Put your patient in a room apart from others and close the doors communicating with other rooms. Let no one near the patient but the nurse. Also, when the patient is better watch for and warn against relapses. There is no disease so prone to relapse. As the witty Irishman said, "La grippe is that disease that keeps us sick for three months after we are entirely well of it!"

Most authors make three types of the disease. I present to you four, namely, the meningeal, the catarrhal, the gastrointestinal and the neuromuscular. It is not necessary to dwell upon these, as their names are sufficiently indicative of their meaning. If the statement already made is true, that the grip bacillus has a way of attacking one at his weakest point, the temperament, the occupation, the previous condition of the patient, will have a great deal to do with the type his attack assumes. So also will the complications presently to be mentioned be determined greatly by the character of the attack; therefore, the temperament, occupation, etc., of the patient.

The surgical complications I have seen and been able to find reported show a remarkable range. They include ulcerative stomatitis, general osteomalacia, suppurative parotitis, abscess in different parts of the body, gangrene of the lungs, epididymitis, orchitis, pyemic joint affections, thrombosis, etc., and surgical affections of the eye, ear, nose and throat. Against these are affections of the nerves that have led to mistaken diagnoses, as, for instance, neuritis of the lumbar nerves that has been mistaken for peritonitis and appendicitis with unnecessary and inexcusable surgical interference and of the axillary nerve simulating rheumatism. Such mistakes and the great liability to infection during an attack of la grippe have led many authors to sound a note of warning against undertaking too readily surgical operations during the prevalence of this epidemic.

Taking up the complications more specifically, we have meningitis and cerebrospinal meningitis as the most frequent complications of the meningeal type. The meningitis from the influenza bacillus is hard to differentiate from that of mixed infection. Indeed, the infection is probably always of the mixed type. So, too, the cerebrospinal meningitis is hard to distinguish from epidemic cerebrospinal meningitis or spotted fever. Cases have been reported where the microscope alone could make the distinction.

As the catarrhal type is the most usual one, pneumonia and tuberculosis are the most common complications. The pneumonia is oftenest from mixed infection. The tubercular infection is the most likely to obtain the more prolonged and depressing the attack. It occurs oftener, however, than is generally supposed. Indeed, some observers have noticed the increase of consumption during the prevalence of la grippe so strongly that they have been led to cry out against the custom of allowing grip patients to go unregulated while attempts were being made to control tuberculosis. The pneumonia is often of the type called fulminant. These cases seem to depend upon a paresis in the capillaries and arterioles of the lungs and it is in keeping with the statement made elsewhere, that the bacillus appears to have a predilection for nerve tissues. They usually lead to fatal termination quickly.

The gastrointestinal type may be marked only by griping of the bowels; on the other hand, there may be great nausea and diarrhea. This may pass off in a few hours, or the diarrhea may continue till it becomes a question of whether or not the patient has la grippe or typhoid fever. Some physicians have noticed the eruptions on the abdomen of the latter disease in these prolonged cases.

The last type, the neuromuscular, may be marked by a severe soreness of one or more muscles, a neuritis of one or more nerves, or a paresis or paralysis without any apparent neuritis. However, these cases are probably all a neuritis. If the trouble is in the small nerve ends, it appears as a muscular inflammation or soreness; if in a large nerve near the surface, we call it a neuritis; if in deeply-seated nerves, we may have the paresis or paralysis without being able to locate the point of the neuritis. I have seen two intestinal cases—one a Bell's paralysis on the left side from a neuritis of the facial in the Fallopian aqueduct, the other a general paresis of the whole right side of the body. The other symptoms, microscopical examination and subsequent history showed that each was la grippe.

Probably the most frequent throat complication is peritonsillar infection leading to abscess. I have seen a great many of these. They were especially numerous in the epidemic of 1906-7. Of course, the infection in these cases is a mixed one. The most frequent suppurative nose complication in my experience has been in the ethmoid cells. I have not had a suppuration in the antrum of Highmore nor in the sphenoidal sinus nor in the frontal sinus. However, I have seen many cases where I diagnosed involvement of the latter, but was happy in being able to relieve the trouble before suppuration occurred. This is true to a less extent of the other sinuses mentioned. The treatment in the non-suppurative cases is general treatment for la grippe, with local applications to relieve the inflammation and to destroy the bacilli as far as possible.

The eye complications are very numerous in numbers, but not in kinds. I have not seen a case of optic neuritis from la grippe, but one has been reported. I have had, however, a case of cyclitis and several of iritis. The former was monocular, came on during a general attack

of la grippe of moderate severity, and left no bad sequelæ. There was no conjunctival secretion, but well-marked redness around the cornea, considerable over entire sclerotic, some photophobia, extreme tenderness over ciliary body, especially above, a very fine exudate in the aqueous, and one night of terrific pain. The treatment was that for the general disease, with suitable topical applications for the local trouble. The course of the disease was three weeks. The cases of iritis were not marked by anything to distinguish them from ordinary iritis, excepting perhaps their stubbornness and pain which seemed out of proportion to the severity of the attacks. The diagnosis was based on the concurrent attacks of general grip and exclusion of other causes. The most common eye complication of la grippe is conjunctivitis. It is very frequent, not always associated with a general attack of the trouble, nearly always purulent, but the discharge is not so profuse as in the ordinary epidemic variety. It is sometimes almost without discharge and appears as an ordinary "cold in the eyes." The inflammation is caused by the *Bacillus influenzæ*, but it is soon complicated by other infections, as the conjunctival sac always contains other bacilli.

There are certain noticeable peculiarities about the usual ear complication, namely: It is very often non-exudative, non-suppurative, affects the hearing very profoundly, yields very slowly to treatment, limits itself to six to eighteen hours of excruciating pain, and is then quiet unless exudation and suppuration follow, when it may lead on to suppurative involvement of the mastoid, the membrane flaccida shows the greatest amount of redness, this redness extending outward in the auditory canal, especially above, and the Eustachian tube is nearly always patulous. These things would indicate attic inflammation, and such it is. Why this part of the tympanic cavity is particularly involved in these cases I am unable to say.

ILLINOIS MEDICAL JOURNAL

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MARCH, 1909.

FINAL EDITORIAL NOTE ON FEE SPLITTING.

That secret fee splitting between the family physician and the consultant is an evil prevailing in this and other states can not be successfully denied; that divers views upon the ethics of this subject are held, and that no well-considered plan for its extinction has been devised, we believe is also true. Our correspondence columns have for the past three months been furnishing interesting reading upon this subject. We find other societies are taking up this subject. Dr. R. E. Skeel, of Cleveland, recently read a paper before the Academy of Medicine of that city upon the subject of "The Ethics of Specialism," which appears in the January issue of the *Cleveland Medical Journal,* and from this article we make the following extracts:

"That it (fee splitting) does exist, and also that it is fairly widespread, is, nevertheless, absolutely certain. My first contact with this side of the financial aspect of modern medical practice came while I was a very young and inexperienced practitioner, when I was approached by a specialist who remarked that he would, confidentially, of course, give me 25 per cent. of any fees which he collected from patients whom I might refer to him. I had no cases in his line and so received no commissions. I have no doubt that I should have accepted this offer had the

opportunity arisen, because I saw no harm in it and scarcely understood the need of secrecy. I had never been taught differently, and should have blundered in this as I did in many other ethical matters during my first years of practice, when ambition to get ahead was uppermost and no decent perception of the other man's rights had been hammered into my head. All this aside, however, I then became aware of the fact that fee splitting and commission giving did exist.

"Later the other side appealed to me after this fashion: An elderly, very respectable out-of-town physician requested me to name a fee for a given operation, saying that his patient was in very moderate circumstances, and I consequently gave him a figure approximating one-half the usual fee for such a case. Arriving in the city a day ahead of his patient was the gentleman's letter saying that he had told his patient the total fee would be double the amount I had stated, and from this I should collect my own fee and the hospital bill (which would be small), and that if my conscience hurt me, a check for the balance to him would be acceptable. I entered into a little correspondence in an effort to ascertain what his previous 'business' arrangements had been, but my friend was wary and did not reply. When the settlement came I did as directed, but instead of sending a check to the doctor gave the balance back to the patient's husband and requested him to turn it over directly. Curiously enough, I never received another case from this source. As I knew who had previously done this man's work I was quite convinced that fee splitting did exist, and that it came out of the patient, not the surgeon. Again, in going out of town to operate, I told the patient before her physician what the fee would be. After the operation the doctor counted out the money, letting go the last few bills very reluctantly. He then requested me to see, without charge, a patient for him, which I did willingly, advising operation. The advice was followed, but as a surgeon was summoned from a distance it became perfectly apparent to me that a fee was collected, and again I was convinced that fee splitting was expected, if it did not exist.

"I could take up instances when one consultant gets all the desperate emergency work from a physician, and another all the deliberately planned special surgery for well-to-do patients, and might hazard a guess that one consultant split fees and the other did not.

"These details are not necessary to prove to the profession that the custom is fairly common, but the unfortunate thing is that the general public is also aware of it. In a recent number of the *Literary Digest* there appear some extracts from a paper by Dr. J. C. Munro, of Boston, upon this subject and comments thereon. The question which we should discuss in all its bearings is the right or wrong of the matter. Is the section of the Principles of Ethics, touching on this subject, antequated and behind the times, or is it right, and the men violating this section fit subjects for discipline, and, in addition, morally blind to the best interests of their patients?

"That there is a seeming injustice in the family physician making one visit and collecting for that one only and then turning the case over

to the eye man, or the surgeon, who will collect the large fee, is also painfully apparent. Is this seeming injustice to be rectified, however, by the specialist charging too large a fee and rebating to the first attendant? If the case is an operative one the family will expect the physician to be present, and in many instances the patient would be much better cared for by his occasional if not constant attention. Is the work any better done for the patient, or is the intelligent patient any better satisfied if he or she thinks the specialist is charging an exorbitant fee and the family physician contributing his services, or will the patient estimate the physician's worth by his own apparent estimate of it, viz., nothing?

"There are instances, I know, when but one fee can be charged but two must be paid. Such instances are largely found among unintelligent foreigners who will pay but one, but even then is it better merely as a matter of policy to let them think they are paying but one and the other is charity, than it is to tell them frankly that their physician must be paid and that his fee has been added to the specialist's? A similar condition may arise when the specialist operates away from home, or upon a case in a private house and the family attendant has charge of the after-care, but here it is self-understood that both men are being paid, but for services rendered by both, which is quite different than the practice of asking the family attendant to assist or give the anesthetic or perform some other minor service and then tendering him one-third or one-half the fee. The latter does not differ in principle from plain commission paying.

"The most serious evils that must of necessity spring from fee splitting are the sale of patients to the highest bidder, whether competent or incompetent, honest or dishonest; the drumming up and performing of unnecessary operations merely for the money there is in it, trafficking in one's own flesh and blood, as Joseph Price puts it, and constant and mutual deception which is going on, for doctors, after all, are but human beings. Among them are to be found all classes just as would be found in any other aggregation of professional men, and no way has yet been devised which will keep the crooked man out, or put him out after he is in, if he is not only crooked but clever. Is there no way by which the referring physician can be recompensed except by the payment of cash? And if the cash must be paid, can not some way be devised by which it shall come out of the man who should pay it instead of the innocent third party, the patient?

"Does proper and efficient service, sending the patient back to his own physician, assisting him in every proper and decent way by giving a helping hand whenever needed to all his patients, rich, poor and poverty-stricken alike, for a large, small or no fee at all, and bearing all the responsibility for disasters that are sure to come, and assisting in every legitimate way to see that the family attendant's services are adequately appreciated and paid for by those to whom they are rendered—does all this discharge the obligation which the consultant undoubtedly owes? If it does, then fee splitting is derogatory to professional character, and those who habitually give or take commissions should be forced

to stop or leave the organized profession. If it does not, then those of us who have been old-fashioned enough not to do it are guilty of the grossest injustice to our personal professional friends upon whom we are dependent for our livelihood."

Another notable contribution on the subject is the action of the councilors of the Texas State Medical Society, which, while it does not cover all the ground, makes a creditable attempt, and until some more complete statement of professional views is possible may well stand as representing the attitude of ethical men on the subject. The statement of the Texas councilors, taken from the February issue of the *Journal of the Texas State Medical Society,* is as follows:

The Board of Councilors, the Court of Medical Ethics of the State Medical Association of Texas, at its last meeting adopted the following explicit resolutions:

RESOLUTIONS ON DIVISION OF FEES.

WHEREAS, The Board of Councilors of the State Medical Association of Texas has been called upon for a decision as to the ethical nature of the practice of dividing fees, that is, giving or receiving commissions or rebates without the patient's knowledge, as between the specialist and the general practician; and

WHEREAS, The board having given the matter careful consideration, and recognizing the importance of the subject and its far-reaching effect, does hereby unanimously

Resolve, That in its opinion said practice, or any modification thereof, is not only unethical, but unjust to all concerned; *that it is unethical* in that it tends to commercialism, to place money before professional skill, to make the patient a commodity to be disposed of for a price, thereby constituting a breach of sacred trust on the part of the physician in that he deceives and fails to deliver to his patient that which he has sold—his honest opinion as to where the most skilful special treatment can be obtained; *that it is unjust* in that the practician takes unearned money from the specialist, the specialist to secure his just compensation must overcharge the patient who is thereby defrauded; the whole placing the physician and specialist in a compromising position calculated to bring reproach upon the profession. Furthermore, be it

Resolved, That the board recommends that both practician and specialist deal directly with the patient, each charging a fee proportional to services rendered and the ability of the patient to pay, in order that, uninfluenced by money consideration, the practician may choose specialists for their honesty and skill, and that specialists to secure business may not be induced to offer other than their integrity and ability.

MORE FEE-SPLITTING AXIOMS.

1. Both physicians and specialists make a fee in harmony with the patient's ability to pay.

2. The patient should know the proposition of a joint fee which is received by the family physician and specialist.

3. The division of every joint fee should be understood by the patient.

4. The surgeon may operate for and receive his fee from the family physician.

5. The family physician should not expect a percentage of the surgeon's fee as a commission for favors bestowed.

6. The surgeon should not offer a percentage of his fee as a commission for favors received.

7. The fee received by surgeon, specialist or family physician must be for value received in services rendered to the patient by each.

THE FENGER MEMORIAL FUND.

The directors of the Fenger Memorial Association in Chicago are directing a letter to old friends, associates, students and internes, setting forth the purpose of this association, and making an appeal for contributions for establishing a suitable memorial in honor of the work done by Professor Fenger. The exact nature of this memorial has not been determined upon. Several suggestions have been under consideration, among which may be mentioned a research fund, scholarship, or some other means of establishing a proper working fund in some special scientific line. Those who knew Professor Fenger are directly acquainted with the admirable character of the man and his special scientific knowledge. To this class the committee does not feel it will be necessary to make a very strong appeal, as they are more than willing to contribute toward this fund. To the other and larger class who knew him by reputation and not through personal intercourse, the appeal is made for contributions. The following is the letter sent out by the association:

My Dear Doctor:—The directors of the Fenger Memorial Association respectfully call your attention to the enclosed circular of information, which sets forth the purpose of their work. Professor Fenger was a national and even an international figure in the development of modern surgery, but the physicians of Illinois and neighboring states are especially in debt to him, and we make this appeal to each of them to contribute something toward this Memorial Fund, to thus assist in the perpetuation of his memory. Many of his friends, confrères, pupils and students have already contributed liberally, but the fund is not yet large enough to be put into use in a manner to be as effectual as was first intended. A little more than $7,000 has been collected. The directors hope to secure at least $10,000 before they begin the work they have in mind.

Will you favor them with a contribution? If so, it will aid them in their work if you will forward your check to Dr. Ludvig Kektoen, treasurer, Rush Medical College, Chicago. Very truly,

COLEMAN G. BUFORD, Assistant Secretary.

Directors: Frank Billings, C. S. Bacon, A. Holmboe, Ludvig Kektoen and William E. Morris.

ABOUT OUR ADVERTISERS.

In this issue and in our February issue we have added a number of new advertisers. We again ask you, the readers of this journal, to read carefully the advertising pages. It will not only be worth your while, but it will help the business department of your JOURNAL. Very often the statement is made to us, in approaching prospective advertisers, that they will take space in THE JOURNAL for a few issues, and if any returns are evident they will be glad to continue. The advertiser does not care

to spend his money for advertising in any journal that does not pay. The success of a publication is directly dependent upon its business success, and its business success is dependent upon its circulation, and the quantity and quality of its advertisers, and the advertising is dependent upon the results which are obtained to the advertiser through the publicity of his business in the advertising pages. You will find something that you will need and want, and do not forget to mention, in writing to the advertiser, that you saw their advertisement in THE ILLINOIS MEDICAL JOURNAL.

THE INSURANCE FEE—RESOLUTIONS BY THE CHAMPAIGN COUNTY SOCIETY.

WHEREAS, The Champaign County Medical Society, by a former resolution, has taken a position requiring all its members to exact a fee of five dollars ($5.00) for insurance examination for all *so-called* old-line companies, and, in our endeavor to enforce such demands, we find that many assessment or fraternal insurance organizations require their examiners to do practically the same work for a small fee; therefore,

Resolved, That we deem it unjust to both the former companies and to ourselves to make such a wide discrimination in the fee for the same service, and that we recommend that, while we shall strictly adhere to a vote of five dollars ($5.00) for all old-line insurance examinations, we also recommend that all so-called assessment or fraternal examination shall consist of a careful physical and chemical office examination with a certificate that the examined is in good health or not, as the case may be, and that a uniform charge of two dollars ($2.00) for such examination shall be made and bill for such shall be rendered to the organization, and not to the person examined, and that a copy of this resolution be forwarded to all companies or societies doing business in the State of Illinois.

WILDCAT LIFE INSURANCE COMPANIES.

An epidemic of new life insurance companies seems to be sweeping through the state in the past few months. Most of them have substantial financial backing. They are making flattering offers to medical men for assistance in securing agents and business, and, from what we can learn, many of our members are biting at the attractive bait, only to learn later that they have been defrauded of their time and money. In answer to an inquiry regarding the officers of one of these companies, one of our members, practicing where the home office is located, responded as follows: "I do not know anything about the medical director. He is a new man to me and this is the first time I ever heard his name. The secretary has the reputation of being more of a promoter than anything else. The company has not made much of a success at this point and has lost the investors some money. I have been ap-

proached by several of the physicians in the state for information concerning the company, as they have been examiners and had not received remuneration for the work done." Finally, brethren, be careful how you take up new insurance enterprises.

MEDICAL COMMISSIONS IN INSANE CASES.

Judge Lewis Rinaker, of the County Court of Cook County, has agreed to give a trial of the medical commission method of committing insane persons coming before his court. This enlightened decision calls for and will receive the endorsement of all persons who understand that insane persons are sick.

President William Busse and the Board of Commissioners of Cook County are willing to do all that lies in their power to provide at the great county hospital and at the detention hospital, in Chicago, facilities for the early, efficient observation and treatment of mental and nervous cases coming, or not coming, within the jurisdiction of the county court.

With this official willingness to do all reasonable things to aid the insane, it remains for the general public to put away its medieval superstition that insanity is a disgrace and to seek the aid of medical science and judicial enlightenment, in suspected or incipient cases of insanity, before the mental or nervous storm bursts and perhaps causes irreparable havoc.

As an earnest of President Busse's advanced position, a truly remarkable matter for a layman, let me quote from his annual message to the Cook County Board, delivered on December 7 last:

> In the twenty years the Detention Hospital has been in service no changes have been made in the direction of enlarging its facilities. In the last few years the character of these institutions has changed. Experience in their management is supported by medical science in the demand that patients, before being sent to Detention Hospitals, shall be given prompt curative treatment. This would make it necessary to establish a psychopathic ward or wards in connection with the County Hospital. The treatment provided for in these wards would require the installation of the hydrotherapeutic apparatus which I recommended a year ago. It is my belief that through the treatment here suggested many insane patients might be prevented from becoming permanent charges of the state.
>
> My recommendation last year that recreation grounds be provided, in which patients might take exercise and live outdoors, is about to be realized. An inclosure containing areas on each side of the building aggregating 8,000 square feet is about completed.
>
> A trained-nurse service has been added to the interne work, with highly beneficial results.

As to the legal side of the question, the Constitution of Illinois provides that no person shall be deprived of "liberty or property, without due process of law." Insane persons often must be deprived of their liberty and of the management of their property. Some of them are dangerous to themselves and to others, not to mention their need of treatment. Hence court proceedings are necessary to commitment. The

Constitution further holds inviolate the right of trial by jury. Hence an insane person, on demand, if the law is obeyed, must be given a jury trial.

I shall try to elaborate herein, in non-technical language, the medical and the legal phases of the early handling of mental and nervous cases, as the education of the general public, and of many of our doctors, too, regarding insanity, is part of the Illinois State Board of Charities' program.

In insane cases there are three methods of commitment—the voluntary, where the patient realizes his need of treatment and care, so states to a county judge and is forthwith committed; the commitment by jury, when the jury finds a verdict and the judge commits; and the commitment by a commission of two physicians appointed by the court, where the commission recommends and the judge acts on such recommendation.

Judge Rinaker, at a conference in his office on February 13 last, proposed to try the medical commission commitment plan, rarely used in Chicago, provided the physicians present would submit to him a list of reputable and competent physicians, from which list he safely could make appointments as need arises. The physicians present agreed to do this.

In addition to county officials and representatives of the State Board of Charities, the following physicians were present: Dr. Hugh T. Patrick, Dr. Harold N. Moyer, Dr. Daniel R. Brower, Dr. Archibald Church and Dr. Sydney Kuh. There is not space in this article to go into details of the conference. I have stated the results.

The urgent necessity for the commission plan of commitment is apparent when one realizes that insane persons are sick. Is it not repugnant to all ideas of humanity, prudence and delicacy that a sick woman should be tried, in public, before a jury, five-sixths laymen, somewhat after the manner of the thief and the murderer, before she can avail herself of what frequently is the desperate necessity for quiet and medical treatment? Suppose she is a young mother and insane because of that. There are many such cases. If she is ill with some disease of the lung and not insane, there is no court proceeding required to get her forthwith into a hospital. In the larger cities she quickly has every facility known to medical and surgical science at her command, be she poor or rich. Suppose this illness is pneumonia. There is a delirium in pneumonia—a form of insanity. What is to be done? She surely is insane now. Suppose she has no lung trouble, but has typhoid fever. Typhoid has a delirium, too. Again, what is to be done? The thing that *is* done is to restrain this woman. She, often against her will, is deprived of her liberty and the management of her property without process of law. That is the only thing to do. But, if she becomes seriously ill in her brain, because of one of the mishaps of childbirth, or from other cause, she must needs be committed, in the absence of an intercurrent of a coexisting physical excuse, to a hospital for the insane by court procedure, before she can have needed care for her mental disorder.

Sometimes, if she is poor and lonely, her agitation and outbursts lead to a call for the police. Imagine her terror when she is taken out of her house by uniformed men and put into a wagon! She may spend a night in a station cell before she gets to the detention hospital and the court. Often her jail companions are murderers, thieves, abandoned women, rats and vermin. All this misery and harm because she comes into contact with officers of the law, kind of heart and meaning well, who do not understand how to care for her in her extremity. Such experiences are not usually the lot of the rich. They happen to the poor. The final horror is a public trial before a jury, after several days' delay in a poorly-equipped place of detention.

While recognizing the dignity and the necessity, in many insane cases, of a jury trial to deprive a person of his liberty and the management of his property, the law gives the alternatives in insane cases not of a criminal character, which I have cited in the foregoing. The medical commission plan, authorized in the Illinois Lunacy Act, is the needed substitute for the rigors of a jury trial. I think any one reading this paper will recognize that insanity is primarily a medical proposition. The legal decision of a case is based on a medical opinion whether the proceeding be by jury or commission. The reader may have a well-grounded fear that the commission might be corrupted by persons whose financial interest would be served by getting some one out of the way. But the judge appoints the commission. Certainly there are enough honorable men and able doctors to merit the confidence of the court.

As to methods of procedure, the public should appeal to medical science promptly in all cases of suspected, of known, insanity. They should seek the earliest possible treatment in a well-equipped hospital. They should abandon the ridiculous, unfounded belief that it is a disgrace to be insane or to have an insane relative. It is no more a disgrace to be insane than it is to have pneumonia or typhoid.

Doctors should realize the great value of early, scientific treatment of incipient and acute cases of insanity coming to their attention in practice. To repeat for emphasis, *the treatment should come before the storm breaks.*

For those patients who are not able to pay enough to secure treatment in private institutions, or who prefer state hospitals, doctors will find it advantageous to proceed as follows when a commitment is advisable:

1. If the patient is willing, have him apply to the County Judge for voluntary commitment under Section 37 of Chapter 85, Hurd's Revised Statutes. Under this law the patient may leave a hospital, to which he is so committed, at the expiration of three days after he shall have given notice to the superintendent.

2. If the patient is in a condition not to give consent and go voluntarily, ask the County Judge to submit the case to a commission of two physicians (Sec. 6, Chapter 85, Hurd's Revised Statutes) *whom he knows to be honorable and competent* and to commit the patient, if the commission so advises.

3. If there is doubt, as in borderline cases, and detention is necessary both for treatment and to reach a diagnosis, seek it under Section 2, Chapter 85,

Hurd's Revised Statutes. If you have not reached a diagnosis at the expiration of the legal ten days, specified in this section, ask the County Judge to continue the case pending further treatment and the determination of the diagnosis. If the diagnosis when determined is a form of insanity requiring treatment in a state hospital, seek commitment by a commission of physicians as in 2 above, if the patient will not ask for voluntary commitment.

All the foregoing procedures are lawful. It is a defensible custom, often used in large cities, to detain a suspected, a borderline, or an acute case of insanity in a hospital, without application to the county judge, just as is done with delirious cases of pneumonia and typhoid. As hinted in the foregoing, sometimes trivial intercurrent or coexisting diseases are used as excuses. I earnestly plead for such method whenever justified. But it always must be remembered that the patient has a right to demand, and to have, a jury trial, before he can be deprived, against his will, of his liberty or the management of his property.

In cases where there is suspected insanity and a commitment other than voluntary is necessary to prevent an impending storm burst, the law helps the physician by providing that (Section 1, Chapter 85, Hurd's Revised Statutes) any person who *"is in such condition of mind and body as to be a fit subject for care and treatment in a hospital or asylum for the insane" may be deemed insane under the law.* A presentation of such facts to a judge, or jury, if the commission plan for any reason is not used, might convince them of the wisdom of a commitment.

As a step to a more humane recognition of insanity as a physical disease, requiring the opinion and service of physicians, the State Board of Charities recommends to the Forty-sixth General Assembly, now sitting, that the so-called "Lunacy Act," Chapter 85, Hurd's Revised Statutes, be amended in Section 2 to permit the detention of "an alleged lunatic, for a reasonable time, not exceeding *thirty* days, pending a judicial investigation of his mental condition," instead of "*ten*" days, as the law now reads. A judge can help a physician, under the present law, by continuing the ten-day period from time to time. The great majority of perplexing cases can be diagnosed within thirty days. Many cases of acute insanity will clear, under proper treatment, in that period of time, permitting the patient to go home, restored without the shock and the humiliation and sometimes the positive injury of a court trial, when his only offense is that he is sick in his brain. If he were sick in his stomach or his liver or in any other organ or part of the body, except the brain or nervous system, a court would be the last place on earth to think of taking him.

Illinois county judges are responding nobly to the growing realization that insane persons are physically sick and that the judges need expert medical advice, such as rarely is available on a jury, in determining commitments where the intervention of a jury is not a legal necessity. An examination of 506 commitment papers taken at random from the files of the State Board of Charities, 1908, covering counties outside of Cook County, show that 345, or 68 1/5 per cent., of the cases were committed by the judge on the advice of commissions of physicians and 161, or 31 4/5 per cent., were committed by jury trials. So Illinois

counties, outside of Cook County, stand more than two to one, in the figures used, in favor of the humane and efficient medical commission method of handling insane cases. Judge Rinaker is now to give it a trial in Cook County. This section of the law (Section 6, Chapter 85, Hurd's Revised Statutes) never has been contested and brought to the consideration of the court of last resort in this state.

It is the earnest recommendation of the State Board of Charities that the county judges of the state who are not using the medical commission plan give that plan a careful trial in all cases where a jury is not demanded or there is not some other compelling reason for calling a jury. Physicians should urge such course upon county judges and explain in detail why. Physicians should explain the situation in homes where they are called to treat mental and nervous cases. Such a campaign of education, in many instances, will enthrone joy where sorrow reigned and will save money to the state and to many individuals.

Fifty-six per cent. of the wards of the state, meaning by the wards of the state the inmates of the twenty state charitable, penal and correctional institutions, are insane wards. Six per cent. more are feeble-minded wards. In other divisions of the service are many insane and feeble-minded struggling under the burden of other misfortunes. The cost to the state of creating and maintaining the eight institutions in the mental defectives group, since Illinois began the benevolent work, has been $41,778,884.04, or nearly 70 per cent., of the total of $59,823,008.05 spent for the seventeen state charitable institutions, not including the two prisons and the reformatory. This shows the economic necessity of preventing insanity when possible. But this article is written to set forth the medical and legal aspects of commitments of the insane, not economics, which is an allied matter of tremendous importance.

WILLIAM C. GRAVES.
Executive Officer Illinois State Board of Charities.

Editorial Note.

THE MEDICAL SITUATION IN CHICAGO.

Under the above caption a Dr. E. P. S. Miller, of 954 West Lake Street, Chicago, contributes his views on medical practice in that city to the *Medical World* of Philadelphia. Dr. Miller is a graduate of the Harvey Medical College in 1905. We give his statement for what it is worth. This may be another case of going away from home to learn the news:

"I attended a meeting of thirty physicians of the West Side recently and found the speeches between the courses of the banquet very interesting. The medical situation in Chicago was summed up about as follows: Medical practice is not what it used to be. Chicago is a much healthier city since the drainage canal was opened. The Board of Health is making great strides in the prevention and stamping out of infectious

diseases. The doctors have too long been walking over one another for the privilege of doing work for nothing, and the Chicago committee on the abuse of medical charities finds a Herculean task on its hands to secure reform. The doctor protests that the laborer is worthy of his hire, but declares by his acts that *he* is not worthy of *his* hire.

"Medical services should be paid for by the patient if he is able; and if not, the city should pay for them; and the whole field of work done for nothing should be eliminated. It is at present a 'nervy' thing to start a practice of medicine in Chicago. The development of fads like Christian science (?) and other cults of healing is making considerable inroads upon the income of the regular practician, and the young physician here has a hard row to hoe. Every corner where two car lines cross blossoms out with signs, and in a couple of months or so the signs disappear, showing that their owners have waked up to the fact that the profession here is overcrowded, and with good men at that.

"The hospital question was freely discussed, one doctor saying that his experience with hospitals had been so unsatisfactory that he now keeps his patients at home as far as possible. The large hospitals received the principal share of criticism, owing to the tendency of the staff to 'syndicate' the business. Some hospitals (although the number is decreasing) do not allow the practician to attend ward patients who are not able to pay for a private room. The nurses and internes 'toady' to the staff and neglect the outsider's patient. Many a patient who thinks her doctor the best one in the country finds that he has only her in the hospital, while the staff doctor has a dozen or so, and the practician suffers by the contrast. The small hospital, in which things are more homelike and the doctor can maintain his usual relations to the patients, profits largely by the comparison.

"The regular practician has been too much of a distributor of cases, and has too often allowed himself to be 'specialized' out of his job. Study, common sense and backbone will enable the practician to perform many an operation he has formerly turned over to the specialist.

"A hopeful note was sounded by one of the physicians who felt that the practice of medicine in the future would be largely preventive medicine and that we would all find plenty to do in that line."

Correspondence.

ABUSE OF MEDICAL CHARITY.

CHICAGO, Feb. 20, 1909.

To the Editor of the Illinois Medical Journal. Dear Doctor:—Members of the Illinois State Medical Society outside of, as well as within, Chicago frequently complain of what seems to them unfair treatment of their patients by Chicago hospitals or hospital physicians. It may not be known to your readers outside the city that a far-reaching plan

of handling the abuse of medical charities in Chicago is now being formulated. The committee of the Chicago Medical Society having the matter in charge will present at the next meeting of the Council a plan for improving the whole administration of medical charities in Chicago, including that both in hospitals and in dispensaries. In order, however, to be thoroughly intelligent in the matter of attacking specifically the abuses in hospitals the committee is undertaking a comprehensive investigation concerning free treatment in Chicago hospitals. It is certain that physicians outside of Chicago can be of great service in this matter. The committee seeks specific instances in which the interests of physicians have apparently been unfairly interfered with by the free-treatment methods of Chicago hospitals. It is hoped that this notice will bring many such instances (if they have taken place) from physicians outside the city. Names, dates and facts should be carefully stated. The committee would also be glad to have its attention called to any free-treatment practice in Chicago that seems unfair, even if specific instances can not be cited. It is not intended that the names of either the physician making complaint or of the physician complained of shall be made public, but the committee must, before using any facts submitted, feel assured of their reliability, and that necessitates a signed statement. This is a matter of universal professional interest; *so please sit down at once and write your complaints.* They should be addressed to the undersigned. DR. ELMER L. KENYON,

Secretary of the Committee on the Abuse of Medical Charities of the Chicago Medical Society, 34 Washington Street, Chicago.

SOCIETY PROCEEDINGS PUBLISHED IN THE DAILY PRESS AND THE REASONS THEREFOR.

To the Editor:—About one-half of the physicians of our county—Wayne—are members of our county society. Not all the others are indifferent. Some tell their patrons and others that the society is a combine, a trust, to increase and collect their fees, but they will not unite with the society, preferring to stay with the people. We let the county papers publish what we see fit to give them, that the people may read what we do at our meetings. Some of our physicians like to have the people believe that they are too busy to fool with the society, and make the days of our meetings their busiest days. We hold quarterly meetings, and I shall hereafter endeavor to give you something instead of preparing for our local papers. J. P. WALTERS, M.D.,

Secretary Wayne County Medical Society.

Special Articles.

THE STORY OF ONE MEDICAL LIBRARY.*

CARL E. BLACK, A.M., M.D.
JACKSONVILLE, ILL.

For the purpose of this paper, medical libraries will be divided into two classes. The first is the great collection of books, pamphlets and periodicals largely used by writers, teachers and those doing research work. The second is the small practical working library of the busy practitioner, which, whether it be individual or co-operative (as the society library), must devote special attention to current literature and to make itself most useful must have facilities for placing its material at the immediate disposal of its readers. This presentation is entirely devoted to the second class.

I wish to call your attention briefly to a work which has been carried on in a small medical library (library of the Morgan County Medical Society, Jacksonville, Ill.) for nearly three years. This work has been developed entirely from the standpoint of the needs of the busy practitioner.

The practical question which confronts all of us, and especially those who have become busy in the actual work of every-day practice, is how to find the necessary time to keep abreast of the times and apply the progress contained in the current journals to the needs of every-day practice. How do the new things in etiology, pathology, diagnosis and treatment get before the members of the profession? Medical progress begins with the experiments, observations and deductions of individuals. These, with their practical suggestions, are usually first presented to some medical society. They next appear in the transactions of such society and in the medical journals. Here they are discussed by the medical profession at large, and if they are worthy they live and shortly find their way into medical books. He who depends on medical books will always be a little behind the one who depends on the current medical literature. He may be safer from trying unproved theories, but will miss the initial inspiration of progress and will be delayed in accepting many a new method of diagnosis or plan of treatment.

One of the most pressing questions is how to make a great mass of journal literature coming to our desks available for daily use. The man in active practice can not read every article which he may need, and articles which may seem uninteresting and useless to-day may become a pressing need in a month or a year. Books and journals are the most important instruments in the armamentarium of any physician, either general practitioner or specialist. They are among the most important stones in the foundation upon which we build our structure of professional progress and future success. If this is true, and I do not

* Read before the American Library Association, June, 1908. Reprinted from "Public Libraries."

believe it can be successfully controverted, then the practical every-day question is, how can we get the most use out of our current medical literature? Anyone who frequently visits the offices of other physicians, as has long been my privilege to do, will be struck with two facts. The average physician subscribes for comparatively few medical journals, and those journals which are taken are scanned when received and then thrown in a corner or piled in a closet in the utmost disorder to be of no further use excepting for fire lighting. A few physicians put them on shelves in sightly bindings, but their substance is still far from accessible. This certainly is not as it should be. These journals contain all that there is of medical progress. When one writes a thesis or a treatise on a given subject he searches the current literature for the progress of that subject, and, therefore, when one wishes to apply to a case the most approved, modern and up-to-date treatment he should have some plan by which he can conveniently, expeditiously and thoroughly consult the most recent current medical literature.

It is an anomalous situation that medicine, one of the most progressive branches of knowledge, has no convenient classified and cumulative index to its current literature. The *Index Medicus* answers the needs of the research library, but is too cumbersome for the busy practitioner and lacks the cumulative feature. It is necessarily six to twelve months behind, for which period the number or volume index of the journals must be used. If one wishes to consult the literature of a given subject, say, for ten years, it would be necessary to consult the ten annual indexes and the 120 monthly numbers of the *Index Medicus* in order to secure the references desired. Such a plan is plainly impracticable for the busy practitioner.

I hope you will pardon a personal reference which seems necessary in order to explain the evolution of the plan I will describe.

In giving up general practice and devoting myself to surgery, consultations with other physicians greatly increased. These were not always surgical and made an increasing demand for some means of immediate reference to the most recent literature along various lines. Living in a city of about 20,000 inhabitants, I was dependent on my own library. My necessities in this regard were not different from those of hundreds of others and innumerable devices have been tried in order to keep in touch with the current medical literature which one has on his own shelves.

These considerations led me to undertake indexing such articles as I thought might be needed for future reference. Several plans were tried until finally, about twelve years ago, a copy of Dewey's decimal classification and relative index was obtained, which gave me an index and classification well adapted to needs of ready reference. I was subscribing for ten or twelve of the best journals and for nearly ten years I made a card index to all the original articles and clinical notes according to the Dewey classification, as I found by experience that it was impossible to select those I would require. As my time became more occu-

pied it was necessary to employ some one to do this work, and for the last two or three years it was done entirely by a trained nurse quite satisfactorily. As the index grew I was able to assist others who would call for references on given subjects.

Finally so many colleagues became interested that I proposed to give my card index, which had now accumulated about 75,000 references, if the society would employ a trained librarian and continue the work. It was decided to undertake to apply the plan for the whole profession of my community. Our local society had already, through the efforts of those interested in medical literature, accumulated 2,000 volumes of books, although most of them were old. Incidentally it may be said that a medical library is one of the most potent forces for maintaining the permanent stability of a medical society. Our collection of books and journals was real, tangible property, to which we now proposed to give an earning value. Our medical library already had a home in the public library building, and the librarian of the public library gave us invaluable assistance in carrying on and improving the work. We also had the good-will and support of the board of directors of the public library, of which I had been a member for a number of years.

Our society being in no position financially to undertake this work, we secured authority for members, who would subscribe a fund, to take charge of the improvement of the library. We had an attorney draw up a contract, explaining to him carefully that we wanted one on which we could base other contracts. The contract read as follows:

We, the undersigned, members of the Morgan County (Illinois) Medical Society, in consideration of the improved facilities to accrue to each of us upon the completion of the work hereafter mentioned, severally promise to pay to the librarian of said society, each month, for a period of 24 months from this date, the several amounts, by each of us set opposite our signatures below, for the purpose of having the library of said society properly catalogued, analyzed and built up; it being understood that we shall, through the said librarian, within the limits of the by-laws of said society, exercise exclusive control of the methods of doing said work, and of expending the fund hereby created, such control to be directed by the vote of a majority of said subscribers.

In December, 1905, the necessary $1,800, or $900 per year, having been pledged, the new work was begun on Jan. 1, 1906. A graduate librarian was employed for a two-year period. About two months of study and instruction were required to give her sufficient knowledge of medicine to enable her to begin the actual work, and during the first year it was necessary to carefully review every subject classified. We indexed and catalogued our medical books. We subscribed for twenty medical journals and the original articles and clinical notes in each of these was indexed. A telephone service was installed and members were urged to seek the library for references on any or all medical subjects. The growth of interest in this work was very satisfactory.

The plan consists of making a card index, both by author and by subject, of all original articles and clinical notes. At least two cards, subject and author, are made for each article, and many articles require two or more subject cards in order that important matters contained in them may not be overlooked. As soon as a journal is received at the

library it is immediately indexed and its subject cards filed under the proper class number and its author card filed alphabetically. We find it much more satisfactory to file the subject cards by classes than to file them alphabetically. This is especially true, as we have no standard medical subject list. As our index has increased in size it has been necessary for us to make an index to the classification. This index also answers the purpose of a subject list, if one wished to make an alphabetical index. That is, by combining our expansion of the Dewey classification and our index to the classification we have subject headings by which a uniform alphabetical list of medical subjects could be made. Our index to the classification contains nearly 14,000 subjects arranged alphabetically and preceded by the class number. By using the index the classification is made perfectly accessible to the physician whether he has any familiarity with the Dewey classification or not. The index also determines in advance for the librarian where a given subject is to be classified and this maintains uniformity. In order to increase the usefulness of the Dewey index for medicine, it has been necessary to make a number of important changes and to establish two form divisions, the first of which supplies all the changes to which body tissues are liable, and the second the causes, symptoms, pathology, diagnosis, treatment, etc., of diseases and body conditions.

The report at our last annual meeting, which completed the second year of the work, gives some idea of the interest which it has stimulated. During the second year 274 volumes of books, 103 pamphlets and 45 volumes of periodicals were added to the library by gift; 114 journals were circulated among the members and 94 reference lists were applied for and made by the librarian in charge of the thirty physicians living in our community. This takes no account of the members who visit the library daily to look up references for themselves or ask the librarian to look up a special article which they desire to read. This is a cooperative plan for indexing current medical literature, and it is gratifying to see the increasing use made of the library, especially by the younger men in our community. We do not intend that any doctor can justly say, "If I only knew where to find something on that subject." During the two years the forty-five members of the society spent over $2,000 on their library. While the minority furnished the funds which made this work possible, it has been strongly impressed on the minds of all that the library and all its facilities exist for the convenience and use of every member, not only of the society, but of the medical profession in our community. The librarian of the public library has the privilege of using the library of the medical society for selected readers. We not only keep the material indexed from week to week, but we also keep a trained librarian at the service of the profession to furnish reference lists on any subject. A few months ago I was asked by the officers of my county society to present a paper on the "Opsonic Index." I telephoned to the librarian in charge of the medical library and in the next morning's mail received a list of eighteen entries, of which the following is a sample:

LIBRARY OF THE MORGAN COUNTY MEDICAL SOCIETY.

OCTOBER, 1907. BULLETIN. No. 11

MORGAN COUNTY MEDICAL SOCIETY.

MEETING OF OCT. 10, 1907.

Leader, Dr. Carl E. Black.

Subject, "The Opsonic Treatment."

"Opsonic Therapy in Skin Disease," R. W. McClintock.—Ill. Med. Jr., v. 13, p. 30, July, 1907.

Principles of Vaccine Therapy," A. E. Wright.—Jr. A. M. A., v. 49, p. 479, Aug. 10, and p. 567, Aug. 17, 1907.

"Studies of Opsonins," W. L. Moss.—Bul. Joh. Hop. Hos., v. 18, p. 337, June, 1907.

"Opsonic Therapy and Skin Diseases," H. R. Varny.—Jr. A. M. A., v. 49, p. 316, July 27, 1907.

This also illustrates the lists which are made and sent to our members every week. There is no thought that such lists shall embrace the complete literature, but they always give us the latest in our leading journals. This is just what the busy practitioner most needs.

We believe the library is for use and not simply a room of archives. The object of those subscribing the original fund was to make the library of benefit to the members of the profession in their daily work and thereby bring speedier, surer and more perfect relief to the sick and suffering. This is an age of rapid and radical advancement in medicine and it has been the purpose of this society to make the library aid each and every member to keep abreast of the times. We have tried to measure the success of the library by the practical use which is made of it from week to week. We believe that a library, a book or a periodical worn out by use is one which has completely served the object for which it existed. It is hardly necessary to say that we had little or no difficulty in securing the necessary funds to carry on the library and the indexing for the third year, which is now in progress. At this time it was necessary for us to change librarians, but, having our classification and index to the classification so well in hand, we found little difficulty in getting another trained librarian to take up the work for the third year. The library subscribes for twenty-seven of the leading periodicals as follows:

Illinois Medical Journal.
Journal of the Am. Med. Association.
New York Medical Record.
New York Medical Journal.
Boston Medical and Surgical Journal.
London Lancet.
British Medical Journal.
Edinburgh Medical Journal.
American Jour. of the Med. Sciences.
Archives of Internal Medicine.
Johns Hopkins Bulletin.
Therapeutic Gazette.
Annals of Surgery.
Surgery, Gynecology and Obstetrics.
Archives of Pediatrics.
American Journal of Insanity.
Journal of Ner. and Men. Diseases.
Brain.
Archives of Ophthalmology.
Annals of Ophthalmology.
Ophthalmic Record.
American Record of Ophthalmology.
Ophthalmology.
Archives of Otology.
Annals of Otology.
Journal of Laryngology.
Laryngoscope.

We believe that this list contains a majority of the really valuable journals published in the English language. The original articles and clinical notes in each are indexed as soon as it arrives in the library. It will be seen that there is little in medical progress which will not be accessible to the members of our society for the asking. We adopted the following rules regarding the journals:

(1) No journal shall be taken from the library until it is indexed.
(2) During the first week after a journal is received it may be borrowed by any member of this society, but can not be kept longer than twenty-four hours.
(3) After the journal has been in the library one week it can be borrowed by any member of this society and kept not to exceed seven days.

Rules two and three were adopted because many of our members discontinued their subscription to certain journals to which they only desire occasional access.

We make it the regular duty of the librarian to get the subjects for the various medical meetings as early as possible and send a copy of the list of references to the leader, whether he asks for it or not. She also posts a copy of the list in the library and other copies in conspicuous places in each of our hospitals. No member can plead ignorance of the subject.

The above plan in use in our library for nearly three years has worked so well that recently we have offered the facilities to the libraries of other medical societies and several have availed themselves of the offer. Most of the newer public libraries have graduate librarians in charge. Where this is true we have advised the medical society to secure a place for their library, as well as for their meetings, in the public library building, and have offered to furnish them a duplicate of our index for $125 a year, or about $10 a month. This is almost the same as the cost of the journals. In other words, we are able to furnish a copy of our card index to the twenty-seven journals for almost the same amount that the subscription for the journals cost. That is, any medical society can have the twenty-seven medical journals on their tables and we will furnish a card index to the original articles and clinical notes in those at a total cost of about $250 per year. There is no reason why the list of journals should not be greatly increased. It is simply a matter of dollars and cents. We are also able to furnish a card index of any journal or journals on any given subject. The great advantage of such a plan over any other which is now accessible is that the index is always up to date and is cumulative. All there is on one subject is in one place and it gives just what is in our library and accessible to the reader for immediate use. If one wishes to undertake more extended research into the literature of a subject the index published by the American Medical Association, the *Index Medicus* and the index to the surgeon-general's library are at the command of the reader. Two years ago while in London I visited the *Medico Chirurgical* library and found that the librarian there was just beginning in a very small way a classification by subject of selected articles in current medical literature.

THE PSYCHIC TREATMENT OF FUNCTIONAL NEUROSES.*

JULIUS GRINKER, M.D.
CHICAGO.

Neurology is no more barren of therapeutic results. Among the many advances made, the psychic method of treating functional neuroses stands out conspicuously. The various cults had absolutely no share in the originating of psychotherapy. They merely utilized well-known principles while the majority of physicians were asleep. But, as in many other fields of activity, the economic side of the question is beginning to awaken the lethargic mass of practitioners who are now rubbing their eyes and asking, What is this psychic treatment? The answer is: It is nothing new; it is as old as mankind and has been practiced ever since there were any practitioners. We have always followed it and did not know it. While formerly we made extensive use of suggestion, we now aim to follow more rational methods. The older methods had a tendency to subject the patient's will to an extraneous force, such as suggestion, hypnotism or prayer. The new psychotherapy utilizes modern educational principles in order to strengthen the weak spots in the patient's mental make-up and aims to cast out the parasites of the mind and to permit healthy thought associations to be re-established. It teaches primarily self-reliance and scoffs at slavish subjection to another's will. The following is a concrete example of psychotherapeutic success: Mrs. C. D., aged 50, sustained an insignificant trauma to her right knee. Several days later she developed a typical case of traumatic hysteria. Her right knee was painful and stiff; the entire right leg then became paralyzed. Various diagnoses had been made and all kinds of treatments were administered. When she came under my observation she had been a confirmed invalid for a period of eight months, spending her time between the bed and an invalid chair. My diagnosis was traumatic hysteria, and the treatment purely psychical. In a few weeks from the beginning of treatment she was able to walk and attend to her household duties. She has now been well for over four and one-half years. For details of treatment the reader is referred to the original. In conclusion, I wish to emphasize that if the practitioner will devote a little more time to his patient's mentality, the ground will slip from under the feet of the "Christian Scientist," "New Thought," "Religious Psychologist," and the entire tribe of charlatan "healers." Their nefarious business of converting the race into a stupendous mass of cringing puppets at the shrine of Oriental superstittion will then be at an end and we shall again have a race of reasoning people.

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* Quarterly Bulletin of Northwestern University Medical School, December, 1908.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

The February meeting of the Adams County Medical Society was held on the 8th in the Elks' club rooms. Present: Dr. Henry Hart, president, and Drs. Robbins, Ericson, Grimes, Haxel, Werner, Williams, J. G. and W. W. Kidd, Gabriel, Ashton, Shawgo Kirk, Pfeiffer, Groves, Rice, Koch, Knox, Blickhan, Nichols, Bloomer, Reticker, Nickerson, Meyer, Mitchell, Bearman, Montgomery, Pendleton, Christie, Jr., Whitlock, Becker and Wells. Also Dr. F. E. Tull, a former active member of the society, who is now located at Albuquerque, N. M. The resignation of Dr. Joseph Fletcher of Mendon, was accepted with regret, and by motion he was elected an honorary member. Adjournment to Hotel Newcomb was had at noon for luncheon. In the afternoon Dr. C. W. Pfeiffer read a paper on "Aneurisms," and presented a most beautiful and interesting specimen of aortic aneurism. Dr. Koch presented a patient with aneurism for demonstration and examination at the hands of the members. Dr. Pfeiffer's paper was entertainingly discussed by Dr. Ericson, who gave a clinical report of several cases of aneurisms seen in his service at the Illinois Soldiers' Home. Drs. Robbins and Nickerson also reported cases. Dr. Christie spoke of the value of the Matas operation for the cure and relief of suitable cases of aneurisms. A case of Saliva Calculus of extraordinary size was reported by Dr. Pfeiffer and the specimen shown. Dr. R. J. Christie, Jr., read a paper on "Ectopic Pregnancy," and had specimens of tubal and ovarian conceptions to show. His case of ovarian pregnancy was especially interesting from its extreme rarity, there having been but nineteen other cases of the kind reported.

CLARENCE A. WELLS, Secretary.

ALEXANDER COUNTY.

A special meeting of the Alexander County Medical Society was called at Cairo, Ill., by Dr. S. B. Cary, president, on Dec. 10, 1908. Non-members were also invited. The primary purpose of the meeting was to meet and enable all Alexander county physicians to meet Dr. J. W. Pettit of Ottawa, president of the State Medical Society, on the occasion of his visit to Cairo, and to listen to a discourse by him on "Medical Organization." The doctor's arrival was indeed at a most opportune time, as the Alexander County Medical Society had lapsed into a state of apathy, existed practically in name only, and its affairs in consequence were in a somewhat tangled condition. His able and efficient portrayal of the objects of organization; the accomplished good wrought by the American Medical Association and the State Society in legislative matters due solely to active, organized effort; the interdependency of the national, state and county societies upon their being active and energetic in their workings for the prompt and speedy achievement of their aims—for the public good as well as the undivided advancement of and broadening influences upon the members—had a revivifying effect upon the personnel of the society. This stimulus was further augmented by a talk made by Dr. Mitchell of Carbondale who accompanied Dr. Pettit, and who confined his remarks principally to the necessity of county organizations, and the benefits to be achieved by harmonious, persistent, actively applied organized energy.

At the conclusion of the address, the effect became immediately apparent, as spontaneous action was taken over the condition of the society. Wherein the society was remiss was at once remedied. Thirteen new applications were handed in and new enthusiasm created which portends to be unflagging for the success of the society.

Jan. 7, 1909, the society had an election of officers, resulting as follows: President, Dr. S. B. Cary; vice-president, Dr. A. A. Bondurant; secretary-treasurer, Dr. J. T. Walsh; delegate to state convention, Dr. J. J. Rendleman; censors, Drs. J. W. Dunn, Samuel Dodds and W. C. Clarke. After the election of officers, thirteen applicants were elected to membership. Dr. J. W. Dunn read a paper, "La Grippe and Its Eye, Ear and Throat Complications."* This was freely and complimentarily discussed by Dr. A. A. Bondurant, with special reference to sinus complications. Dr. James M. McManus reported a case of pelvic abscess, which also was discussed by Drs. Dodds, Bondurant, Clarke and Walsh.

The society changed its meetings from once every third month to the last Thursday of each month.

At the next meeting of the society "Variola" will be discussed.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held Dec. 16, 1908.

A regular meeting was held Dec. 16, 1908, with the president, Dr. Alfred C. Cotton, in the chair. "An Analysis of Eleven Hundred Cases of Fractures of the Patella Treated by the Open Method," Dr. A. P. Heineck. Discussed by E. W. Andrews, Carl Beck, William Hessert, William Fuller, V. J. Baccus and C. C. Rogers. "Empyema of the Sphenoid," by Dr. A. H. Andrews. Discussed by Henry Gradle, V. J. Baccus and A. H. Andrews. "When Should the Operation be Performed for Strabismus and Squint Eyes in Children and on Adults?" by Dr. A. L. Derdiger. Discussed by W. F. Coleman. Adjourned.

DISCUSSION ON PAPER OF DR. HEINECK.

Dr. E. Wyllys Andrews:—Dr. Heineck covered all the important points in the operative treatment, but it will do no harm to emphasize a few of them by repetition. In the operation of suturing a fractured patella and ruptured ligaments, we have one of the most perfect pieces of surgical technic and at the same time a method which is only advisable in the best surroundings. The greatest antiseptic precautions are an absolute necessity. Often it is true that a good functional result follows non-operative treatment, but not uniformly. I am always disposed to agree with those who consider the lesion one of the joint, as a whole, rather than of the patella alone, hence our operative measures may be considered as securing the union of the ligaments primarily and the union of the fragments of the patella secondarily.

The patella is a sesamoid bone in the ligament which unites the quadriceps to the tibia. In flexion it is analogous to the olecranon process of the elbow joint. When the patella is fractured and the ligaments are torn, there is produced a V-shaped gap which must be closed up in each lateral ligament, and that can only be done by suturing the ligaments. The point Dr. Heineck made about the fringes which overlie the front and broken edges of the patella is an important one. These fringes absolutely prevent bony contact. Therefore, it is fallacious to attempt to bring these fragments together subcutaneously or by a non-operative method. The cure of a fractured patella by operation has consisted in the past of wiring together the fragments, but this method has been abandoned by many operators. The tear in the lateral ligaments is the thing to repair, by inserting a series of stitches beginning close to the border of the patella on each side. When these are drawn together the bony surfaces of the patella will be in perfect contact. In my own practice I have added the circular stitch around the bone, passing through the ligament above and the tendon below. The fringes which tend to hang down between the fractured ends are of

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* For text of paper see page 310.

great value to supplement the repair. I lay them over each other and suture them, overlapping by catgut stitches. This adds 50 per cent. to the strength of the repair.

Dr. Carl Beck:—The important question in fracture of the patella, as in all fractures, is to get apposition of the fractured ends. Union can not be perfect if the fractured ends are not in close apposition. These facts have been brought out by Hoffa and Trendelenburg, the latter particularly, who examined a number of cases, and found that in most of them the interposition of tissues between the fragments is the cause of non-union; therefore, he and all other surgeons advocate the open method of treatment. The open method is probably the method of choice of all surgeons to-day.

The old Volkmann method of puncture of the joint and removal of the hemarthrosis was practiced for a while. It is the method of choice in Germany in fresh cases, followed by massage and bandaging. In old cases the method described by Dr. Heineck is employed. A very valuable method is the one suggested by von Bergmann, used where the fragments are widely separated, consisting in the chiseling off of a part of the tibia with its ligament, bringing in apposition the two fragments and then replacing the bone which has been chiseled off after healing has occurred between the two parts of the patella. This method has not been used much so far.

Dr. William Hessert:—Is the patella essential to the functional integrity of the knee joint? Numerous cases of extirpation of the bone have been reported, and the functional result obtained is a good one, provided that the lateral extension of the quadriceps has been left intact. We see cases of extensive separation of the fragments in old fractures where the function of the joint is good. One old gentleman whom I saw recently with a separation of from four to six inches, can put his foot on a chair and raise up his body, the most severe test one can make.

Dr. Andrews struck the nail on the head when he said that these cases are not cases essentially of fracture of the patella, which is merely a sesamoid bone, but are cases of fracture of the patella with laceration of the lateral ligaments, the latter being the more important feature of the injury. It matters little what the injury to the patella is, but if the lateral extension of the aponeurosis is badly torn, function will be bad; if sutured by subcutaneous methods, the results will be bad. It is not a case of wiring the fragments together, but of treating the fascial laceration. This is the important part of the whole thing, and if that is sutured, it matters little how the patella is treated, whether wired or stitched circumferentially.

Subcutaneous operations are absolutely to be condemned and ought not to be performed at the present time. They are only of historical value.

As to indications for operation, it is a question whether the mere fact of fracture of the patella is an indication. Fracture of the patella with little if any separation of fragments would indicate that the lateral ligaments and capsule are injured but little, and you will probably get bony union or strong fibrous union with the closed method of treatment. If the fragments are separated to any extent, an operation is the proper thing to do.

Is there any way of determining before operation whether the extensor apparatus has been lacerated extensively? It has been suggested to put the patient on the table, and if he can raise the leg there is not much lateral laceration, and *vice versa*. I have never seen a patient who could do that and I have always found an extensive laceration laterally. This may or may not be of some value as a clinical test.

I do not believe that Dr. Heineck emphasized the limitations of an operation. It should not go out that all fractures of the patella should be operated. They should be operated only under certain conditions, and only by men who are competent and who have access to a modern hospital. No one is justified in attempt-

ing an operation under other conditions than these, where there is such possibility of an ankylosis or suppuration or loss of life. It is unsafe to advise that the operation should be done by every occasional operator.

As regards statistics: I think that not nearly all the failures are reported that should be. We have all seen cases of infection, but they do not find their way into the literature, as a rule. For this reason statistics are not of much value.

Dr. William Fuller:—It occurred to me that in the discussion of the subject presented by Dr. Heineck this evening, some means of bringing to our notice for a moment the anatomy of the patella would serve a useful purpose; and with this idea in view, I requested Dr. White to furnish us with a specimen showing the anatomy of the knee joint. We are, therefore, able to briefly review the anatomy of this joint by the specimen which will be passed around, and thereby the better appreciate the points brought out regarding the operative treatment in fractures of the patella.

The patella is seen to occupy a position in front of the knee joint, having attached loosely to its posterior surface synovial membrane. In front, the patella is covered by a somewhat loosely attached fibro-periosteal covering and which, with the capsule behind, forms at the periphery of the patella, a very firm attachment to this bone. Thus we see that the patella is embedded in a dense fibrous sheath, to which the attachment is strong at the circumference only. This intimate relation at this point will explain, in all transverse fractures of the patella, especially where there is separation of the fragments of bone, why the knee joint is usually opened.

The deficient blood supply of the patella is another anatomical feature not often referred to. It is not difficult to understand how an injury may deprive it still more, till the non-union in many of the patellar fractures could rationally be attributed to this fact. In fact, this is the explanation offered by many surgeons in the failure of bony union in many fractures regardless of the treatment used.

I believe the lesion in the bone is the minor part of the real damage done in the condition described under the heading fractures of the patella. The fracture *per se* is of small moment, as shown by cases which recover with good functional results, while the bone fragments remain widely separated, and also by the cases which show functionally good results after complete excision of the patella. Close study of cases in which the ligaments and aponeurosis about the joint are torn without fracture of the knee cap will amply demonstrate the true significance of a fracture of the patella. Such a case, through the courtesy of Dr. Channing Barrett, recently came to my notice. In this case a man of 60 years sustained an injury which ruptured the extensor femoris tendon about one inch above the patella. The nature of this injury passed unnoticed till discovered by Dr. Barrett some weeks after the accident. The patella had not been fractured, but there was a wide separation of the ends of the extensor tendon of the thigh; the disability in this case was exactly that which is often seen in the condition described as fractures of the patella. Argument is scarcely needed to convince one that the disability following the treatment of the condition under discussion, is due, not to failure in bony union of the patella, but to failure in recognizing and properly repairing the torn ligaments and aponeurotic structures, as so well brought out by Dr. Andrews. The bony repair here is as elsewhere, or in many other bones, not essential to good functional results. In the treatment of all fractures, it is my belief that functionally good results are, as a rule, possible; while in the treatment of most fractures I believe that anatomically perfect or even good results are not, as a rule, possible; nor is this result really necessary or called for, as has been repeatedly shown in the treatment of fractures generally.

I believe in the open operative method of treatment in fractures of the patella when this treatment can be carried out by surgeons of acknowledged skill, and with a faultless technic, but under no other circumstances. Cases do recover

with fairly good and useful extremities, when intelligently treated on the expectant plan, which should be the method of choice for the occasional operator and the general practitioner.

In the open method of treating fractures of the patella the joint can be emptied of blood and synovial fluid; the shreds and tags occasioned by the zigzag tears frequently seen in the overlying fibro-periosteal covering can be removed from the joint; the tilted pieces of patella can be readjusted, and what is most important of all, the suturing of all lacerated soft structures can be done with certainty and accuracy.

The perfect safety of this operation has been demonstrated not only by hundreds of recent operations on this and other joints, but was long ago shown by Lister, who, owing to the high mortality following operations on the knee joint in pre-antiseptic days, made use of this particular operation of wiring the broken patella to further demonstrate the utility and reliability of antiseptic methods of operative surgical work.

Dr. Victor J. Baccus:—Dr. Heineck should be complimented, for he has exposed the subject thoroughly and systematically. My experience with fracture of the patella is limited to four cases of transverse fracture of the patella, which were treated by the operative method, and two cases which were treated with the non-operative method. Of the latter, one was transverse and the other was a fracture transverse, and the lower half of the patella was split in two, thus forming two additional fragments.

The indication for the operative treatment in our four cases by the open method were the wide separation of the fragments and the inability to replace and retain the fragments in good apposition. Intraspinal or lumbar anesthesia is dangerous, hence it should be avoided. Sonnenberg had two fatal cases in 900 intraspinal anesthesias. If the general anesthesia is contraindicated, we may choose the deep local infiltration method of Schleich. This is carried out by infiltrating a transverse zone four inches above the knee joint. Then a superficial skin infiltration at the site of the incision selected. In this manner the operation can be performed practically without pain.

What I wish to particularly mention is when to operate, either as soon as possible following the accident, or at the termination of the first forty-eight hours. Contrary to the general opinion expressed by many surgeons, the four cases operated by us we operated within two hours of the accident. We have no cause for regret operating early, for the patients made good recoveries, with bony union of the patella and perfect function of the joint. I can not explain satisfactorily to my mind why we should wait. (a) Without interfering, the bleeding from the bone fragments and soft tissue is arrested only by the pressure of the blood and synovial fluid accumulating in the joint. (b) By Nature's own resources of coagulation and thrombosis occurring in the divided ends of the bleeding vessels.

The resorption of these contents loads the lymphatics of the joint, synovial membrane and periarticular tissues; thus even at the end of the first forty-eight hours the soft tissue would still be edematous. The anterior soft structures of the joints are mostly fascial in nature and easily distinguished; hence it is not necessary to wait forty-eight hours before operating. Some operate at once. The suturing of the fragments and of the soft tissue arrests the bleeding at once and places the structures in a favorable position to begin tissue repair.

Operative Technic.—The semilunar incision with convexity downward is best, for it gives room and places the scar outside of the line of the bony fracture. In one of our cases, as Macewen and Morris have reported, we found the base of the prepatellar bursa interposed between the bony fragments, and no method but the open method could have brought those fragments in close apposition. The contents of the joints are preferably removed by light and genteel sponging. The suture of the fragments should be done by the encircling method of Paul Berger, whenever possible, for this method does not require the drilling of the

bone fragments. The aponeurosis of the extensor quadriceps tendon should be sutured with eversion of the edges, thus assuring us to not dip in between the fragments. In our cases we used a small drain placed laterally at both ends of the incision. The suturing material should be wire, for it possesses decided advantages. It forms a solid suturing material, is aseptic, and it can be removed under local anesthesia, if necessary. The skin may be closed with any suturing material. A light plaster cast should be applied and removed at the end of the first week, and perform massage of the quadriceps extensor muscle. A second cast is applied, extending from the ankle to the junction of the middle and upper third of the thigh. With such a cast the patient can get up, walk on his foot, and get about as early as the twelfth day. The cast finally removed at the end of the fourth week.

Dr. Cassius C. Rogers:—There is only one point to which I wish to refer, and that is the time of ossification of the patella, which occurs some time between the third and seventh year, so that when the child first begins to get around by creeping and then begins to walk, the patella is not yet ossified.

I wish to present in this connection a patient who fractured his patella in 1905. The fracture was treated by the non-operative methods. Eleven months afterward the ligamentous union ruptured and the patella was broken again. This time the fracture was treated by placing a wire around the patella, the wire breaking and the fragments separating. A third fracture occurred twenty-five months after the original injury. I then was called and recommended removal of the patella, to which the patient consented. I made a long incision just internal to the quadriceps tendon, and sutured the quadriceps extensor to the ligamentum patella by turning down the anterior one-half of the quadriceps extensor tendon. A year has elapsed since the operation, and the patient has perfect use of his knee joint; in fact, he does not even limp.

Another patient had a comminuted fracture. The leg and thigh were immobilized by means of a cast for three months, when it was found there was an ankylosis of the joint, without separation of the patellar fragments. I resected the patella and the patient has a useful joint, with perfect extension and flexion.

I would not recommend resection of the patella for fracture, except as a last resort in comminuted ununited fractures, where other methods of treatment have failed. Otherwise it is bad practice to remove the patella, because we get splendid results by bringing the fragments together.

DISCUSSION ON DR. ANDREWS' PAPER.

Dr. Henry Gradle:—Dr. Andrews has stated in a concise and clear manner the views generally accepted by the relatively few surgeons who have studied disease of the sphenoid. In all probability the sphenoid is the least frequently involved of all the nasal accessory sinuses. The symptomatology of the involvement is obscure. We do not know very much about acute cases; they seem to be characterized by headache and a feeling of fulness. Whether they generally heal without surgical interference can not be stated, but appropriate treatment, such as cleansing douches, and the free application of adrenalin leads to disappearance of all symptoms in many cases of suspected acute infection of the sphenoid sinus.

From personal experience I can recommend the usefulness of Dr. Andrews' probe and canula. It is very difficult to enter the sinus without removing the middle turbinal, except in persistent chronic cases where atrophy of this bone has taken place, or where there is an uncommonly large meatus. The least bulging of the septum of the nose toward the side to be explored renders examination exceedingly difficult.

Among the symptoms of chronic sphenoid sinus suppuration are headaches of the migraine type. I have known several instances where such headaches were dependent on sphenoid sinus suppuration and disappeared when that condition was relieved. The sphenoid sinus has of late years been of more importance in the estimation of rhinologists on account of danger to the optic nerve

following extension of sphenoid suppuration. Quite a number of cases are on record showing that sphenoid disease may extend upward and involve the optic nerve in neuritis and later in irrevocable atrophy.

Dr. V. J. Baccus:—I had occasion while demonstrating in operative surgery to investigate some of the sinuses, and it is easy to understand that the rule for finding the length of the sinus, as shown by Dr. Andrews, is correct. I have had occasion to see Dr. Freer do deviated septum operations where the septum was pressed against the middle turbinated body, and one could not have entered the sphenoid sinus on that side. Surgery of these cavities has been much advanced, particularly by the rhinologist, but also by the general surgeon.

Dr. A. H. Andrews (closing the discussion):—It is difficult in some cases, and in many cases impossible, to enter the sphenoid cavity without removing the middle turbinal. In cases of normal septums, it is usually much easier than is ordinarily supposed, and almost anyone can explore the sinus, especially after having tried it on the cadaver. I had some cases to report, but they are all alike as to symptoms, much the same exploration of the cavity, finding it diseased, draining it, relief of symptoms, stoppage of discharge and symptomatic cure.

I went to the country to do a mastoid operation for a discharging ear with brain symptoms. The patient died, and I did an autopsy at the request of the family and the local physician. There was no mastoid disease, but disease of the sphenoid which caused the meningitis. Many cases of meningitis and disease of the cavernous sinus are due to sphenoid disease or disease of the other accessory cavities of the nose.

DISCUSSION ON DR. DERDIGER'S PAPER.*

Dr. W. F. Coleman:—Most cases of strabismus are monocular and few are alternating. The question of greatest interest in this connection is how do these persons see? The popular belief is that with the fixed eye they see one thing, and with the deviating eye they see another. One image of an object is eccentric and the other is not. They really see only one object. Refraction is usually far-sighted and the eyes are undeveloped. Ninety per cent. of patients who squint are far-sighted, which is also true of those who do not squint; therefore, this is not the only etiological factor, though an important one, and that was not emphasized in the paper as it should be. Worth of London studied this question more than any other man, and his theory is that the fundamental determining factor is a fault of the diffusion faculty, which is not fully developed until the sixth year of age, and 75 per cent. of these cases squint before the end of the fourth year. Hyperopia and amblyopia increase the tendency to squint.

As to treatment: Increase the vision first of the squinting eye and correct the hyperopia by putting on glasses. I would not hesitate to put glasses on any child, no matter how young. Worth put them on a fourteen weeks' old child; by obscuring one eye; by atropin in the fixing eye; by electricity, and you may double vision in one month. Cultivate the fusion power by means of Worth's amblyoscope. If you can not get simultaneous vision, you might as well give it up. Use the amblyoscope for fifteen minutes once or twice a week. If you can get fusion, you can cure that patient, and you can do it in 30 per cent. of the cases. In another 30 per cent. you will get relief, so as not to have more than five degrees of convergence.

As to operation, I operated on both interni of a child six months old, and got good results, both as to the appearance of the eyes and the nervous condition. What operation will you do? What is the objection to tenotomy? You can not tell the immediate effect or what will happen later. I have seen divergent strabismus follow tenotomy of the internal rectus done by the best operators. It is not the thing to do. I have never yet had an eye that did not remain

* For text of paper see page 284.

where I placed it by advancement. It is unphysiologic to cut a strong muscle in order to strengthen a weak opponent.

Dr. Derdiger (closing the discussion):—I wish to thank Dr. Coleman for his kindly criticism, but fear that his remarks may be misconstrued when he says he operated on a six months' old child for strabismus. That was doubtless a case of congenital strabismus. During my visit to the meeting of the A. M. A. at Atlantic City and Philadelphia Clinics in 1907, Posey reported 17,000 cases; 53 were of a congenital type and 309 were alternating, or concomitant, squint. I stated that non-surgical treatment should be resorted to before an operation is performed. I operated on the lady who is before you this evening, doing an advancement operation two years ago, and the results are beautiful, and the vision is exceptionally good. In the amblyopic eye she now has nearly normal vision. But, that is not the reason why we should say to operate as early as possible. I believe in conservative methods, trying every known form of treatment before resorting to operation. I am referring to the concomitant convergent squint in children up to the age of ten years.

Regular Meeting, held Dec. 23, 1908.

A regular meeting was held December 23, 1908, with the president, Alfred C. Cotton, in the chair. George E. Shambaugh gave an illustrated talk on "The Causes of Labyrinthine Vertigo and the Methods of Examining the Semicircular Canals in Diagnosing Diseases of the Labyrinth and of the Cerebellum." His remarks were discussed by J. Holinger, Harry Kahn and G. W. Hall. E. C. Rosenow followed with a paper entitled "Phagocytic Immunity and the Therapeutic Injection of Dead Bacteria in Pneumococcus and Staphylococcus Endocarditis."* The paper was discussed by James B. Herrick, Wm. J. Butler, Allen B. Kanavel, and the discussion closed by the author.

Adjourned.

DISCUSSION ON THE PAPER OF DR. SHAMBAUGH.

Dr. J. Holinger: There are many arguments favoring the assertion that the function of the semicircular canals can not be to determine the direction whence a sound comes. The strongest argument is that in an open space without walls around us we can not distinguish the direction whence sound comes. In some instances to determine whence a sound comes is of the utmost importance, in that life and death may depend on it. For instance, the lookout on a boat in the ocean in the middle of the night may hear the bell-buoy ringing, the lives of the whole crew and passengers may depend on the accurate determination of the direction whence the sound comes. Three or four men may try to determine the direction of the sound, one of whom will say that the sound comes directly from in front or from the rear, another from the other side. As long as there is no deflection of sound it is exceedingly difficult, if not impossible, to determine the direction of the sound. Therefore the semicircular canals can not serve this purpose. A further remark concerns vertigo, which is a very frequent condition. It can be produced by diseases of the external ear, middle-ear or labyrinth, e. g., a piece of wax in the ear; by affection of the Eustachian tube and also by diseases of the acoustic nerve and cerebellum. As to the invasion of the semicircular canals and vestibulum by inflammatory processes, Dr. Shambaugh has presented the subject of its diagnosis from a purely scientific standpoint, but, from a practical standpoint, I can assure you that these occurrences are not as rare as was formerly our general impression. It was the general belief that the invasion of the labyrinth by a suppurative process would at once lead to meningitis and death. This is not the case. Our knowledge on both these points dates only from the time since we learned to analyze the function of the labyrinth. As to the first point, the comparative frequency, last spring I had an opportunity to make a diagnosis in two cases of acute infection of the labyrinth. Both patients got well.

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* For text of paper see page 263.

By means of the tuning fork tests we are able to analyze the function of the cochlea, while by means of the tests Dr. Shambaugh spoke so ably of to-night we are in a position to analyze the function of the vestibulum and semicircular canals. These tests combined gave us the means to solve another question, namely, whether there is such a thing as an acute serous labyrinthitis which may heal without loss of function of the organ. This question was answered in the affirmative.

Dr. Harry Kahn:—The essayist has demonstrated the complicated anatomy of the internal ear quite lucidly and has also made plain the physiology of this organ; for this he is to be greatly complimented. However, regarding the diagnosis of cerebellar abscess of otitic origin, it is not so simple as he would have you think. According to the Vienna statistics, about 1 per cent. of cerebellar abscesses run a latent course, and out of 153 authentic cases reported by Neumann, there were 22 per cent. of these that could not be diagnosticated on account of complicating meningeal symptoms, and in 11 per cent. of these 153 cases no pus could be discovered at operation. Therefore, if we take the 10 per cent. that run a latent course, and the 22 per cent. that were undiagnosticated or unsubstantiated as cerebellar abscesses, it gives us about one-third of the cases in which no definite diagnosis can be made. According to Neumann, even after a diagnosis has been made and operation performed, it is only by chance many times that a cerebellar abscess is discovered. It is, therefore, not an easy matter to make a diagnosis in these cases. The nystagmus is but one of the symptoms; there are many others to be considered, as, for instance, the general symptoms of tumor of the brain, meningeal symptoms, the systemic manifestations, etc.

The differential diagnosis between circumscribed disease of the semicircular canals and abscess in the cerebellum can not be made until the labyrinth has been removed, and then only can the diagnosis of cerebellar abscess be made if the patient still has nystagmus and other cerebellar symptoms remaining.

Dr. George W. Hall:—In regard to nystagmus and dizziness being produced by this condition to which Dr. Shambaugh has alluded, I take it that he does not pretend to make a positive diagnosis of cerebellar abscess, in the absence of internal ear disease, on those two symptoms alone. His idea is, that other symptoms are necessary in order to make a positive diagnosis of involvement of the cerebellum. I think if he were to attempt to make a diagnosis on those two symptoms alone, he would go astray in the great majority of cases, because there are a great many things which might produce similar conditions. We may have all the symptoms of cerebellar disease, with tumors located in other portions of the brain. Frontal tumors, for instance, may produce similar conditions by pressure.

DISCUSSION ON THE PAPER OF DR. ROSENOW.

Dr. James B. Herrick:—We ought not to let work of this kind pass without a word of praise. Dr. Rosenow is to be commended not only for the high grade of his work, but for the persistence with which he has kept up his study of the pneumococcus, so that now he is an expert in this line. While this is essentially laboratory work, it is to be commended because it is being brought into close relationship with patients; it is definitely clinical laboratory work. The results he has obtained are encouraging. While but few conclusions are warranted as yet, still he has determined certain facts that are to stand for all time. If he will persist, some practical good will surely come out of his investigations.

A word concerning the practice of making blood cultures. At the Presbyterian Hospital, where a large part of the clinical material has been found by Dr. Rosenow, we have been making systemic examinations of the blood for bacteria in all suspected or known cases of typhoid, pneumonia, malignant endocarditis; in fact in all infections. This has been done for about seven years. It has been said by some that these bacteriological examinations of the blood are dangerous to the patients. I think I am not mistaken when I say that of several thousand bacteriological examinations of the blood, made by various physicians in the Pres-

byterian Hospital, in the last seven years, the blood having been withdrawn from a vein in the arm, and in other thousands of examinations made at the Memorial Institute, not a single instance of an accident to an artery or nerve has occurred —certainly, no serious accident. The only thing in the shape of an accident has been occasionally a slight subcutaneous hemorrhage or traumatic hematoma. This insignificant operation is not really as dangerous as the hypodermic injection. There one is injecting something, and it is not always sterile. The asepsis that is practiced in bacteriological examinations of the blood practically eliminates the danger of infection, and it is to be remembered that nothing is injected, but rather something is withdrawn. The danger is practically *nil*.

This work ought to be continued for another reason. If the time ever comes when laboratory men or clinicians present to us a specific for these infectious diseases, as, for instance, malignant endocarditis, then we must know what organism is at fault. It will not do for us to say that a given case is one of malignant endocarditis, but we must be able to say whether it is a streptococcus, pneumococcus or staphylococcus endocarditis, as the case may be. We can not treat a case of streptococcus infection in the same way that we treat a case of infection by the gonococcus if there is a specific remedy on hand. That leads me to say that in our bacteriological work better and better results are being obtained as the technic is being perfected, and the men who are working with one particular organism, as, for instance, Dr. Rosenow with the pneumococcus, are able to get pneumococci out of the blood more frequently than those who are not so expert in this work. Dr. Irons, who has worked with the gonococcus, has succeeded four or five times in getting the gonococcus out of the blood in cases of gonococcus sepsis and of malignant endocarditis.

There is one other point I would briefly dwell on. A bacteriological study of the blood will help in enabling us to understand better the clinical picture of these cases of endocarditis. The cases of endocarditis due to the pneumococcus and those that are due to the staphylococcus or streptococcus do not present one and the same clinical picture. At present we are not able to draw a line of distinction between these various classes of endocarditis. We can not say, for instance, that the peculiar course of the temperature, the behavior of the pulse, the occurrence of petechiæ, etc., are positive indications of infection by one particular organism, and yet, even now, there are certain symptoms which point suspiciously toward infection with particular organisms. It has been shown, for instance, by many observers, that the course of the disease in staphylococcus endocarditis is more apt to be malignant, fulminant or pyemic in type in its chills and temperature, and that its metastatic or embolic foci are more apt to be accompanied by suppuration. If we can tell in every case of endocarditis of the malignant type what organism is at fault, ultimately we may be able to draw a clinical picture of the various forms of endocarditis, and to differentiate between them largely on the basis of the clinical symptoms.

I want to emphasize the fact of the existence of these chronic cases of ulcerative or malignant endocarditis that have been mentioned by Dr. Rosenow—the cases that last for weeks and months, or even for from one to two years. These cases are sometimes very puzzling, but are more common than is generally recognized.

Dr. William J. Butler:—The comments of Dr. Rosenow, concerning the properties of the pneumococcus, isolated from his cases of endocarditis, by virtue of which he explains their uniform localization on the valves of the left side of the heart, are interesting. We know, however, that certain bacteria, as the meningococcus, etc., show a predilection for certain tissues.

His excellent experiments with the pneumococcus have been especially interesting to me, as the many anomalies and apparent inconsistencies when the theory of opsonins is held in view, are rendered far less perplexing, and in fact are greatly clarified through a knowledge of Bial and his pupils.

After some unsatisfactory results in his inquiry into the causes of the resistance of the chicken toward, and the susceptibility of the rabbit to, anthrax

infection, he abandoned the humoral theory of immunity. As the result of subsequent investigation, he established the aggression theory, the chief points of which are as follows: Pathogenic are distinguished from non-pathogenic bacteria in that they have the power to live in the organism. The destruction of the non-pathogenic bacteria proves that the body has protective powers against bacterial invasion. These protective forces rest in the phagocytes. The pathogenic bacteria resist phagocytosis. This latter is effected either by excretion of certain substances, or by changes brought about in their environment. These substances are named aggressins; aggressin determines the aggressiveness or virulence of the bacterium in that it paralyzes the phagocytic immunity and thus permits of the unhindered growth of the bacterium. This property may be demonstrated by freeing an aggressin containing an exudate from bacteria by filtration and injecting an animal with this fluid and a less than fatal dose of the corresponding bacterium, when it will be found that a fatal disease will be produced.

While aggressin is the cause of infection, it is also the cause of immunity.

If an animal is injected with an aggressin containing exudate that has been freed of bacteria, he becomes immunized against the bacterium that gave rise to the production of aggressin by the formation of an antibody named antiaggressin. The serum of this animal has the power, when injected into another animal, of communicating a passive immunity.

Hoke's experiments with the pneumococcus proved it to be an exquisite aggressive bacterium.

Dr. Allen B. Kanavel:—I would like to ask Dr. Rosenow if any experiments have been made in transfusing blood from one animal to another, and if so, what effect it has on phagocytosis in this particular condition? It seems to me, in slow chronic infections of this nature something of that kind might be of interest experimentally.

Dr. Rosenow (closing the discussion):—In answer to Dr. Kanavel, I will say that experimentally there is no good evidence to believe that the transfusion of normal blood from one animal to the other would do much good, for the reasons I have given, and which I do not care to discuss at this time.

With reference to the remarks made by Dr. Butler, I am well aware of the theory that has been advanced by Bail and am familiar with the work that has been done in connection with aggressins. There is a fundamental difference between Bail's theory of aggressin and the results we get here. No one has yet been able to show that virulent pneumococci protect themselves against phagocytosis by the excretion of an anti-phagocytic substance. Bail assumes this to be the case. The only way I can get an anti-phagocytic substance, a substance which Dr. Hektoen has named "virulin," is by getting it from within the bacteria themselves. It is not a process of excretion; it is a substance which we can extract under certain conditions. In this process of extraction the bacteria themselves are broken up.

One word with regard to the harmlessness of blood cultures. There is no more danger attending the making of a blood culture, as Dr. Herrick has just pointed out, than that which attends the use of a hypodermic. The withdrawal of blood from patients often helps us in making a proper diagnosis. I have made blood cultures when patients were in the best as well as in the worst possible condition. No untoward symptoms followed the puncture in a case of thrombosis of the subclavian and innominate veins, a condition most favorable for thrombosis. There is one requisite, however, which should be remembered, and that is the use of a needle with a sharp point. If you attempt to puncture the vein wall with a dull point, it rolls away, while a sharp point will catch the wall and go through without difficulty. As an illustration of the harmlessness of this procedure, I might say that the median basilic vein of my left arm has been punctured about a hundred and fifty times in the last six years, and sometimes every day, for three weeks at a time, without any ill effects.

Regular Meeting, held Dec. 30, 1908.

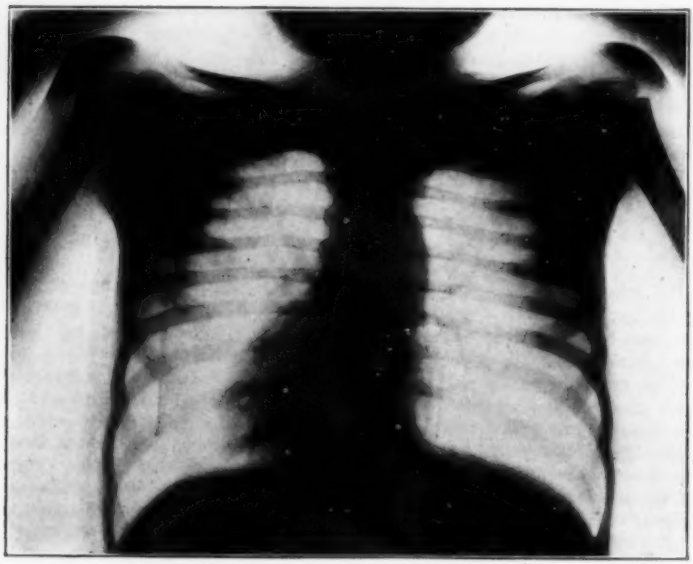
A regular meeting of the Chicago Medical Society was held on Wednesday evening, Dec. 30, 1908, at 8:30 o'clock, in the Assembly Hall of the Northwestern University Building, Chicago. Dr. Alfred C. Cotton, the president, occupied the chair.

SITUS VISCERUM INVERSUS, WITH PRESENTATION OF CASE.

FREDERICK TICE, M.D., CHICAGO.

The author, in presenting this case, said: This patient, is presented for two reasons:

First.—Because of the comparative rarity of the condition. In speaking to a considerable number of the members of this society, those with an extensive clinical experience, all but a limited few have been free to admit that they have



Right. Left.

never encountered this condition. Those few who have observed the condition did so, principally, as an accidental finding at the postmortem. The text-books on pathology and medicine, with two or three exceptions, are strikingly silent. The current medical literature contains only a few reports, scattered over a considerable period and many of these are from postmortem records.

Second.—Because of its clinical interest from the standpoint of clinical recognition and particularly the possible erroneous clinical conclusions. As this meeting is a clinical one it is not necessary or is it desirable to consider the vague and questionable etiological factors. It is sufficient to say that the condition is designated as situs viscerum inversus, situs inversus, situs transversus, or transposition of the organs. Dextrocardia, when congenital, the heart and in some instances also the great vessels being transposed, is a comparatively more frequent condition. Ziegler and other pathologists classify such cases under the section of malformations and in the sub-group of monstrosities by perversion.

Presentation of Case.—(a) Clinical History: W. C., male child, eight years old. Has always been well, until about two months ago, when he complained of headache, slight chills, nose bleed and loss of appetite, and his mother thought he had a fever. After a few days, as his condition did not improve, he was placed in bed and was first seen at this time. Suspecting, from the history, a possible typhoid, the abdomen was examined. Several typical rose spots were present and the left hypochondrium examined for the confirmatory palpable spleen, which could not be detected. It was at this time, before the systematic routine examination, that my attention was directed to the right sided portion of the heart.

Thinking that other organs as well as the heart might be misplaced led to the discovery that the liver was on the left and the spleen on the right side. At the time of the first examination, during the typhoid, the spleen was easily palpable two fingers below the right costal arch. After a mild course of about three weeks' duration patient made complete recovery.

(b) Physical Examination:—General physical condition is good. Head and neck are negative.

Chest.—(1) Heart: Inspection and palpation reveals the apex beat in the right fifth intercostal space about one inch inside of the nipple line. Cardiac outline by percussion shows the base to be at the upper border of the third right costal cartilage and rib extending about one inch to right of the sternum. The left border is at the left border of the sternum. The right border from the right end of the base line to apex beat. Auscultation is negative except that maximum intensity of tones corroborate location of apex as previously indicated. (2) Lungs: Negative, except normal pulmonary signs are present where cardiac findings should be and such are present to the right of the sternum. Traube's space is absent on the left but present on the right side.

Abdomen.—(1) Liver: Percussion determines liver dulness is located on the left side, with gastric tympany on the right. (2) Spleen: Dulness on right side—not palpable.

Extremities.—Patient is right handed but uses left almost as much.

Genito-urinary.—Right testicle is more dependent than left. To assist in the more accurate location of the heart, liver and spleen a röntgenogram was made.

Believing that the stomach is also transposed, the patient was given one ounce of bismuth subnitrate and a second röntgenogram was made. The most interesting feature consists in the possible mistaken conclusions to which the condition might lead. Some of these are the following:

1. With an obliteration of Traube's space, dulness in the lower left chest and the heart displaced to the right, the diagnosis of a left sided encysted pleurisy with an effusion is quite possible.

2. Dextrocardia, congenital or acquired, could be diagnosed if the other conditions were not determined.

3. The impossibility of palpating the spleen in the usual location in those conditions in which it is enlarged, might cast doubt on the probable diagnosis as first occurred in this case.

4. In case of a cholelithiasis the pain would be located on the left side. This condition associated with jaundice and absence of the hepatic dulness in the normal location might indicate the existence of an acute yellow atrophy of the liver, which diagnosis was actually made in one recorded case.

5. As other organs are transposed it is reasonable to conclude that the appendix is on the opposite side. This being true, in case of appendicitis the findings would be on the left.

DISCUSSION OF CASE PRESENTED BY DR. TICE.

Dr. Charles A. Parker:—Mr. President, I have seen two other cases of situs transversus besides this case, one in the cadaver. The first case that I ever saw was in a female cadaver shown before the Association of American Anatomists five or six years ago, and then I saw a case in Rome, in a serving man That was

complete situs transversus. It was discovered the last day I was there, and the landlady being an English woman, and thinking I would be interested, told me about it.

Dr. Tice has asked me if I have ever seen this condition in the dissecting room. While I have had experience with 600 or 700 cadavers, I have never seen it, but that is not a great number of cases in which to discover an anomaly of this kind.

The President:—My experience has been very limited. While assisting the late Prof. J. S. Knox as far back as 1885, I think, he presented a case in the children's clinic with transposition of the heart, and there was some question as to whether there was transposition of any of the abdominal viscera. The case was to have reported at the clinic, but we lost track of it. Jacobi showed a case in 1883 in the College of Physicians and Surgeons at a clinic. I happened to be present. There was transposition of the heart and liver. While serving on the Pension Examining Board with the late Dr. Blake and the late Dr. James Lydston, we found an old soldier with transposition of the heart, liver and spleen.

Those are the nearest approaches I have seen to this anomaly presented by Dr. Tice. I think I have seen half a dozen cases of transposition of the heart, one on the cadaver and the other on living patients, but it must be that this transposition of the abdominal and thoracic viscera is very rare, as Dr. Tice has been looking over the literature and finds little mention of it.

Dr. Max Biesenthal:—Mr. President, some four or five years ago we had a case in one of our charitable institutions of a patient suffering from pulmonary tuberculosis, whose apex beat of the heart was at the nipple line on the right side. The man died, and a postmortem examination showed that he had complete transposition of the thoracic viscera, the abdominal viscera being just as they are in the normal individual. The left lung had three lobes, while the right lung consisted of only two lobes, and besides there was a complete transposition of the cardiac vessels. Owing to carelessness I do not believe that this case has ever been reported before any society.

In closing the discussion Dr. Tice said:—This boy is one of a family of five children. The other children are all perfectly normal as far as can be determined. An examination of the father and mother also revealed perfectly normal conditions.

Dr. William Cuthbertson presented a case of intestinal fistula closed by the use of Beck's paste.

INTESTINAL FISTULA CLOSED BY USE OF BISMUTH PASTE (BECK).

WM. CUTHBERTSON, M.D.

Associate Gynecologist, Northwestern University Medical School; Gynecologist to St. Luke's Hospital.

Intestinal fistulæ not infrequently result after abdominal and pelvic operations, more especially where dense adhesions of the intestines themselves or adhesions formed between the intestine and other of the abdominal or pelvic contents have had to be separated or broken up. Fortunately in the majority of cases these fistulæ close spontaneously; all that is required to accomplish this result is to keep the patient quiet in bed and regulate the diet and bowel movements.

Unfortunately, however, some fistulæ persist and require one or more operations before they can successfully be closed. Where the adhesions in a case of intestinal fistula are not too dense and the bowel can be easily isolated, it is not such a difficult matter to permanently close one of these unnatural openings, but on the other hand occasionally a case will present itself in which the abdominal contents seem to be glued together in one conglomerate mass, and any efforts on the part of the surgeon to separate the dense adhesions are entirely futile. These are the cases in which we find fecal fistulæ persisting in spite of repeated efforts on the part of the surgeon to obliterate them.

The case which I present here this evening is one of the latter class. The patient, Mrs. J. M., was operated on in the Cook County Hospital in September, 1907, some pelvic work being done, the exact nature of which we are ignorant. A fecal fistula made its appearance after the operation. In January, 1908, an attempt was made to close this fistula but without success. She was again operated upon in March and July of the same year, the fistula remaining unclosed after each one of these operations.

In August, 1908, she entered my service at St. Luke's Hospital, where I made an attempt to close the opening into the bowel. On entering the abdominal cavity I found all the intestinal contents completely glued into one mass, with adhesions so dense that it was impossible to separate them without danger of doing extensive damage to the bowel. The adhesions were so widespread that I could not isolate sufficient intestine to exclude that portion which was involved in the fistula. I contented myself therefore with excising the mucous membrane of the fistulous opening, suturing the edges together with fine silk and covering over these stitches with interrupted Lembert sutures. After a long and tedious operation the patient was put to bed in fairly good condition. In the course of four or five days the fistula again became patulous.

Having used Beck's paste in a former case of postoperative intestinal fistula with apparent good results I determined to try it again on this patient.

Prior to injecting the paste I got the wound as clear from pus as possible by the use of a 10 per cent. iodoform emulsion in glycerin. This emulsion was used every day for several days, at the end of which time there was a very slight amount of pus discharging from the opening. I then began the use of the paste, injecting first iodiform emulsion and then the paste immediately after. The paste was injected every other day for a period of two weeks, then once a week for three weeks, at the end of which time the fistula closed and has remained so ever since.

From the experience which I have gained with this patient and the one which I mentioned before I find it is absolutely necessary to keep the patient in the recumbent position in bed in order to procure a successful result. If they are allowed to get up and move around the paste is immediately expelled either by the action of the abdominal muscles or the pressure of the intestinal contents and it is impossible to secure a permanent closure. It is also necessary to use the iodiform emulsion in order to get rid of the pus, otherwise the pus will well up around the plug of paste and render it inert.

I consider Dr. Beck's paste as one of the most valuable agents in the treatment of these intractable and distressing conditions.

DISCUSSION OF CASE PRESENTED BY DR. CUTHBERTSON.

Dr. E. S. Trostler:—Mr. President, I can report a case of fistula that persisted for about six months. It was about the size of an ordinary lead pencil, and two and a half inches deep. The woman was about 32 or 33 years old. She came to me with large quantities of feces and pus coming from the fistula, and after cleaning it out I injected first a soft paste and applied a swab over the top until it hardened. I injected twice a week for three weeks. At the end of that time I saw it was closing. I once used the hard paste, that is, paste with 10 per cent. paraffin, and it opened up again, and feces began to come from it. I then returned to the soft paste. I had to open quite an area of skin in the scar, and found that below the skin surface the fistula was about one and three-quarter inches deep, and just permitted a small probe to pass down. This woman is now up on her feet all the time, and for the past two weeks there has been no discharge whatever.

Dr. Carl Beck:—Mr. President, the fistula the doctor has presented does not seem to be entirely healed because there is a small sinus in the center, but from what I understand it is not a fecal fistula any more. It is discharging some pus. For all practical purposes it is perhaps cured, but it will not be considered healed until there is absolutely no discharge, and the sinus is replaced by connective tissue.

We have had a number of fecal fistulas, and I would say that our experience presents three points. First: Where the fistula was the result of some tubercular process (intestinal tuberculosis is quite common, and causes ulceration of the bowel), then in case of laparotomy we have no closure, but we have constant discharge of fecal matter. I had a chance to make a postmortem examination, which gave me a very clear idea of what is going on in such a fistula. This class of fistula treated with the paste does not promise much. The second class of fistula is one which is the result of suppuration of the appendix or tubes or suppuration of the other organs complicated by an intestinal opening, and where the sinus tract is a long one, the opening from the abdominal wall distant from the opening of the bowel. That is the class of fistula presented by Dr. Cuthbertson, and is the most favorable. We have found no necessity to use antiseptics for cleaning, and we inject the fistula without any preparations except on the outside. The third class of fistula which can not be treated in this manner is the so-called lip fistula, where the abdominal wound and intestinal opening meet, and where the mucous membrane grows over the fistula, and the skin grows over towards the intestinal opening, forming a sort of cicatrix with epidermization and mucous membrane formation. Such a fistula will never close except by operation.

Now in regard to the treatment, there has been great praise but also some adverse criticism. Only yesterday I received a letter from Berlin, together with some reprints of papers containing mostly satisfactory results, but one report of poisoning and unsatisfactory result. When I first started this treatment I knew that it would require a great deal of the doctor's and patient's time. It requires the closest attention, not only to take a syringe and inject that bismuth into the fistula, but to observe the case, whether they are tubercular or infected otherwise, and so on. It takes a great deal of my brother's time with two assistants to examine and take skiagraphs, but only in this way can the best results be obtained. Some foreign observers write that they have given their assistants an order to inject, and that after four or five injections they found that the results were not satisfactory. Of course they will find poor results, but if a man takes his time, conforming to the individual indications, he will obtain excellent results. My brother has obtained very good results because he pays very close attention. These cases must not be treated in a haphazard way without any individual indication.

In closing the discussion Dr. Cuthbertson said:—The case I presented to-night did not show the tortuosity Dr. Beck has drawn here. It is a more direct fistula, such as this one here. From my experience I believe we have two forms of fistula resulting postoperatively, one in which there is separation of the abdominal muscles, and hernia persists along with the fistula. In this case you get the intestines lying close underneath the skin, and as a rule you have a good deal of cicatricial tissue. I am quite convinced from the limited number of cases I have seen that there should be a considerable amount of vitalized tissue lying between the intestine and the surface of the skin in order to get a successful result from the injection of the paste. A case like this I am quite sure would be comparatively easily cured, even as Dr. Beck says, without the use of an antiseptic. In a case of this kind, where you get a more or less direct opening, you have to prepare that surface for the reception of the paste. In a case in which I had a failure there was postoperative hernia, and the intestine lay very close to the skin of the abdominal wall. In a case in which I had a good result there was considerable vitalized tissue lying between the skin and the intestine itself.

CARIES SICCA.

Dr. Max Reichmann presented three cases of caries sicca.

Dr. Thomas J. Sullivan:—Mr. President, caries sicca is a form of tuberculosis confined to the shoulder joint, and was first described by Volkmann. The most characteristic feature of this kind of caries is absence of suppuration, absorption of the shoulder joint, and often the head of the scapula, sclerosis and concentric atrophy of the articular head of the bone. Caries sicca is a rare form of joint tuberculosis not infrequently traceable to a trauma. It may be present in chil-

dren, but is more frequent in adults and middle life. Marked atrophy of the muscles of the shoulder fixation with tilting out of the elbow simulating a luxation, hollow under the acromion, accompanied by pain on efforts of motion, are the most prominent diagnostic signs on inspection. As the disease progresses there are the systemic signs, such as anemia, loss of sleep and appetite. This disease may be mistaken for rheumatism by the general practitioner. In the advanced state I have known the mistake to be made of diagnosing this disease as subcoracoid luxation. Dr. Reichmann informs me that of five thousand skiagraphic plates made for diagnostics that he has found only four cases. I have seen and treated four cases, one a female of 5 years, one a woman of 40 years and two males aged 19 and 28 years. The adult female, a case of about three months' duration, received at two week intervals a 10 per cent. iodoform glycerin interarticular injection. This was followed by cessation of pain and apparent cure as observed one year after treatment. The young male adult improved after an interarticular iodoform injection, but was lost sight of before a final result was obtained. The last two cases are now under treatment and observation. Dr. Senn's book on "Tuberculosis of Bones and Joints" should be consulted, as it has the best description of the disease to be found in any of the text-books.

Dr. V. J. Baccus:—With reference to the remark made by Dr. Reichmann that one of his cases might have been suffering from a specific osseous inflammation, I wish to report a case of syphilitic osteochondritis of the head of the right femur in a young boy, aged 6, illustrating the difficulty at arriving at a correct diagnosis. Family history, negative. Personal history, negative. The present illness began about one year ago. The mother of the child noticed that the infant's gait was abnormal, and discovered a stiffness of the right hip joint. She consulted Dr. G. Osborne, who called me into consultation. The examination revealed an apparently well developed child; no glandular enlargement; teeth and throat normal; no evidence of rickets. The right hip was painful and fixed. No shortening existed. Attempt at rotation caused the child to cry. The great trochanter was in normal position and relation to Nélaton's line, and no periarticular swellings. The temperature slightly elevated; the pulse normal. The skiagraph of the hip presented a cavity in the right femoral head, and looked to be tubercular. This type of tubercular disease of the hip was an ideal one for surgical interference, that is, opening the joint, curetting the cavity, and filling it with Mosetig-Moorhof iodoform plug. The parents consenting to have the joint explored, this was carried out as follows: A longitudinal incision over the right femur and the muscles divided and retracted and the joint opened. The head of the femur was located out of its cavity. There were no fluids in the joint. We noted an irregularly formed femoral head, with the cavity at its apex, as shown by the *x*-ray; an absence of the ligamentum teres. The cavity was lined by cartilage, the surface of which was also irregular. The femoral neck was thick and irregular. From these findings we favored a diagnosis of congenital syphilis. Small pieces of the cartilage removed for microscopical examination revealed no tuberculosis. The hip was replaced and the joint closed. A cast applied for ten days, and the patient put on specific treatment. He made a good recovery, with full joint motion.

In the future such a patient should receive the benefit of the Wasserman blood reaction, and I should recommend strongly the services of W. J. Butler, who has done so much work along this line. The therapeutic diagnosis test should also be tried.

Dr. Reichmann, in closing the discussion, said:—The difference between syphilis and tuberculosis of the bones is very marked. In tuberculosis we have always atrophy of the bone, in syphilis marked hypertrophy, and in this case I found only atrophy, and therefore I diagnosed it as tuberculosis.

CARCINOMA OF ANGLE OF THE MOUTH, WITH PLASTIC REPAIR.

VICTOR J. BACCUS, M.D., CHICAGO.

This patient is 52 years of age, with a specific history of about fifteen years' standing. A year ago he noticed a beginning growth in the left angle of the mouth, involving more of the mucosa than the skin. It soon ulcerated and in-

volved the tissue of the angle of the mouth to the last molar. The digastric and masseteric glands were enlarged, but the carotid lymphatic glands could not be palpated. A small piece of the growth was removed for microscopical examination, which was made by M. Herzog, which proved to be carcinoma.

Following the excision of such growth, one meets with considerable difficulty in exhibiting a plastic repair which leaves very little deformity. As you notice, the deformity in this patient is very slight; in fact, practically unnoticeable, The steps in the operative technic were as follows: First, excision of the growth and the cervical lymphatic glands. Second, the liberation of the entire lower lip from the inferior maxilla. Also a separation of the lower lip from the right angle of the mouth. Third, liberation of the open lip and left cheek. Fourth, incision downward and outward from the angle of defect to the angle of the jaw. Fifth, the downward displacement of the upper part of the cheek and rotation upward of the lower half of the cheek. Sixth, displacement of the lower lip to the left. Seventh, coaptation of so formed flaps with fine silk, and moist boric dressings applied.

Other methods of meloplasty are easier and consist, as a rule, of two pedicle flaps made from the neck, one to line the buccal cavity, and the other to replace the defect of the skin by the excision of the growth. The chief disadvantages of the latter method are the longer period of convalescence. This patient has received *x*-ray treatment for the period of a month, and up to the present day there is no evidence of recurrence.

Case 2.—Man of 51; specific history; infected about fifteen years ago. Three months ago the patient consulted Dr. W. Vary for an ulcerative tumor of the floor of the mouth. The latter physician recommended excision of the growth, as he believed it to be malignant. However, the patient was placed on a rigid systemic and local antispecific treatment, with no result. Operation: The cervical glands of the corresponding side of the neck were removed. Second, excision of the growth and closure of the defect in the floor of the mouth by a flap made from the tongue. Results: Ten weeks after the excision recurrence from a point near the middle of the floor of the mouth, with rapid involvement of the tongue and inferior maxilla. Although the patient received *x*-ray treatment and Coley's toxin, microscopical examination by Dr. Herzog showed the tumor to be a carcinoma. The course of this tumor corroborates the observation of Ritter of Berlin, who lately reports five cases of malignant tumors of the buccal cavity, with a history of syphilis, and in every case the tumor was of the most malignant type.

Case 3.—Floating cartilage of the left knee joint. Transverse division of the ligamentum patella in order to expose freely the joint cavity. Patient, aged 42; had been troubled the last ten months with tenderness and the locking of the knee joint at times. About three months ago, while examining his knee, he discovered a small round-shaped body, felt by him along the inner border of the patella. By abducting the thigh and abducting the leg, he could demonstrate at will this foreign body, diagnosed as floating cartilage. The patient entered the Policlinic Hospital and received a general and local preparation of the operative field. Operative technic: A two-inch longitudinal incision along the inner border of the patella was made. The foreign body which we had located and localized by digital means prior to making the incision could not be found. Repeated identical manipulations of the limb which had always brought the foreign body at the site of the incision, as well as digital exploration of the joint, failed to locate the cartilage. The lower end of the incision was carried downward and outward to the tuberosity of the tibia and the outer border of the external condyles. Transverse division of the ligamentum patellæ exposed fully the joint cavity. The foreign body was found in a small recess of synovial membrane, under the quadriceps extensor tendon. Closure of the synovial membrane with the eversion of its edges by the removable wire. Closure of the ligamentum patellæ also by wire. Interrupted silkworm gut sutures in the skin. Small gauze drain at the

inner angle of the wound, which was removed at the end of forty-eight hours. Light plastic cast applied. Beginning passive motion on the sixth day. Primary union, with full restoration of joint function.

DISCUSSION.

Dr. Emil Beck:—I wish to say that the first case that the doctor presented shows comparatively a very good plastic result. It is unfortunate that these plastic results should occur in such cases, because I am afraid that recurrence, if not present, will appear shortly. In traumatic lesions this would be an excellent matter. Those surgeons who have had experience with plastic results in the face will know how difficult it is to gain good results.

The doctor has mentioned that both of these cases has had syphilis. There is one very interesting observation in this respect published by Rosin, whom you all know as being a very careful biologist and close observer. Rosin says that in all his experience he has seen very few cases of undoubted diagnosis made by a biologist and a surgeon that would correspond. If the biologist made a diagnosis of sarcoma the clinician made a diagnosis of syphilis, and if the clinician made a diagnosis of syphilis the biologist made a diagnosis of sarcoma. In investigating how this came about he found that it is a most difficult thing to differentiate between sarcoma and syphilis. That accounts for the so-called cures with different methods, particularly the Coley treatment. Some years ago I used the Coley treatment in the County Hospital, and treated ten cases of sarcoma and carcinoma. There was one case that I think was positively cured of sarcoma, which we had diagnosed, and it proved to be a case of syphilis in after years. We should be very careful in regard to the diagnosis of tumor in individuals with a syphilitic history.

The second point is in regard to the technic. I would not undertake any operation on or near the face without starting from the carcinoma and taking out the whole block in one piece. An operation in the neighborhood of the jaw without removing the jaw is of absolutely no value. It is proved by biologists that the lymphatics contain large nests of carcinomatous cells, and that it is absolutely valueless to remove the gland and leave the deeply injected lymphatics behind. I have two cases in which we did the block operation on the upper jaw, which we are going to present to the society after we have observed them a little longer. It is of no value to show a case of carcinoma two or three or four months afterward. Carcinoma of the mouth that has not returned for three years is still of a doubtful nature. I have seen recurrence four years afterward, and even six years is not a long time to elapse before you can say a case is absolutely cured.

Dr. Daniel T. Nelson:—I have a case that may interest the general surgeon. It interested me very much, although I was not a general only a gynecic surgeon, but I did the work the best I could. In 1891 I was away on a vacation. There was a relative in the town 17 years of age. He was sitting on the ground whittling out some toy with his knife, when the toy broke, and the point of the small blade went somewhere into the knee. He immediately and instinctively straightened the knee at once. I was called, and the family physician came soon after. I found him lying on the grass, still with the leg extended in this position (illustrating), and he could not and would not bend the knee. After the clothing was removed the injury was found to be exactly in the center of the patella. The knife we found soon after lying in the grass, with the point of the small blade gone. To straighten the leg hurt so intensely that he would not allow it. Under ether I found that there was great difficulty in flexing the leg. I supposed the point of the knife was somewhere in the patella, for the skin wound was exactly in the center of the patella. I first enlarged the wound over the patella, and soon found that there was no injury of the patella apparent. I supposed the point was inside of the joint somewhere. I made a longitudinal incision with the knee in the extended position, through the tendon of the quadriceps, and attempted to insert my finger to find where the point of the knife was, for I was satisfied it was in the joint somewhere. I could not get my finger under the patella to discover anything, but I was satisfied from the position that

it was more likely to be in the outer border of the patella than the inner. I made an incision on the outer side of the patella, and with difficulty I could reach some foreign body. I attempted to raise up the patella, as I was not a sufficient surgeon to be anxious to cut the tendon completely off at this point. I soon found that the only thing I could do was to cut the ligamentum patella, and then dissecting about it I turned it up, and there was the knife blade securely implanted near the center of the outer condyle of the femur. I did not then know that the patella traveled such a long distance in the flexion of the joint, for the knife blade had evidently entered the condyle above the patella when the knee was fully flexed sitting on the ground and breaking off when the leg was suddenly extended, had passed under the patella and been driven in by it, as was plain from the rasping of the under side of the patella now in full view. The next thing to do was to remove it. There was one-tenth or one-fifteenth of an inch exposed, but I could not pull it out with any forceps we happened to have; but by working it back and forth from its arrow-like shape I was soon able to remove it, and then dressed the wound in the way you might suppose, by putting ligatures into the tendon of the patella and suturing the other wounds that had been made. I could not get kangaroo tendon, so used catgut, and dressed the limb with a posterior splint. The outcome of the case was that at the end of two or three months he was able to flex and extend the limb to that extent (illustrating), but he would not, on account of the pain, allow any further flexion, but at the end of three or four years he was playing football or baseball, and in a mixup he did flex the limb completely, and he has had a good knee ever since.

Dr. Aimé Paul Heineck:—Dr. Baccus is to be congratulated upon the successful outcome of his case. The knee joint, of all the joints in the human body, is the one that is most frequently the seat of foreign bodies. These foreign bodies may originate from within the articulation, may be introduced from without, such as pins, needles, bullets, etc. Not infrequently they are due to previous traumatic or pathological processes in the articulation. Articular foreign bodies may be single, may be multiple, may be small, may be large. Their shape is variable. They may be of a fibrous, fatty, cartilaginous, osteocartilaginous, or of an osseous nature. They may be free in the articulation; they may be attached by a pedicle to some part of the articular wall. Their presence always impairs the functional integrity of the joint, and when not associated with arthritis deformans, or other general disease with joint manifestations, it is imperative that they be removed.

In the diagnosis of obscure joint affections, skiagraphy is of invaluable service. The division of the ligamentum patella in cases of this nature is a measure of necessity. Other clinicians have, at times, had to employ the same incision. Chaput of Paris, in removing a foreign body from a knee joint, employed the same technic as described this evening by Dr. Baccus.

In the removal of foreign bodies from a non-septic knee joint, we must keep in mind that it is needless, in fact, that it is dangerous, to irrigate the articulation. We must also keep in mind that the drainage, in clean cases, of the articulation or of the periarticular tissues serves no useful purpose. For the approximation of the divided tissues only absorbable suture material should be used. Therefore, in the removal of foreign bodies we discard irrigation, drainage and all buried sutures of non-absorbable material. To locate and to remove the foreign body in the case presented by Dr. Baccus, it was necessary to completely divide transversely the ligamentum patella. After removal of the foreign body, the divided tendon was reunited by sutures. It has healed and now its anatomical and functional integrity are completely restored.

I here show you a skiagram of a case of knee joint injury admitted to the Cook County Hospital. In this case the ability to actively extend the leg on the thigh was lost. There was a distinct sulcus between the divided margins of the ligamentum patella. On the affected side the patella was 5 cm. higher than on the uninjured side. The joint was swollen. Its contour was altered. The condition could easily have been mistaken for a fracture of the patella. An *x*-ray picture demonstrated the exact nature of the condition. We were dealing

with a complete traumatic subcutaneous rupture of the ligamentum patella. The seat of rupture was exposed; the divided tissues were reunited; cure resulted. In all complete divisions of the ligamentum patella, in all complete divisions of the quadriceps extensor femoris muscle, in all complete transverse or oblique fractures of the patella, the power to actively extend the leg on the thigh is either partially or completely lost. The way, and the quickest way, to overcome this impairment or loss of function, is to restore the continuity of the extensor apparatus of the leg. Functional integrity goes hand in hand with anatomical integrity.

I want to add that in the repair of a divided quadricepital tendon or of a fractured patella, or of a solution of continuity of the ligamentum patella, the operator will find that the most serviceable incisions are those that give a flap with a convexity upward or downward. The toilet of the synovial cavity is best effected my mopping with dry gauze sponges. Irrigation of the articular cavity must not be resorted to. In the treatment of lesions of the extensor apparatus of the leg, what we said with reference to the removal of foreign bodies from the articulation, can be repeated with added emphasis; no irrigation, no articular or periarticular drainage, no buried sutures of non-absorbable material. It is needless to add that these operative procedures should only be performed with rubber-gloved hands.

Dr. Baccus, in closing the discussion, said:

The reason I mentioned that these cases had a specific history was that a writer of Berlin calls attention to the fact that in some of these cases that give a history of specific disease, for some reason the tumor assumes almost a malignant type.

With reference to the removal of the lower jaw, I must say that in the first place the tumor did not involve the mucosa of the lower jaw, but simply the soft tissue extending downward.

In the last case which I have shown I suggested to the man that I would do such an operation, but unfortunately he was financially situated so that he could not have the amputation performed.

In the last case, speaking of metallic sutures and the longitudinal incision, we could not find the foreign body in the patella and decided on dividing it. I used wire for the reason that I did not want to introduce any catgut in the joint. Everybody used gloves and still we had an infection.

In closing the perineum, I use wire and leave it in ten or twelve days.

CHICAGO SURGICAL SOCIETY.

A regular meeting was held Nov. 6, 1908, with the President, Dr. A. E. Halstead, in the Chair.

CASE OF POSTOPERATIVE MILIARY TUBERCULOSIS.

Dr. William E. Morgan read a paper on this subject, in which he reported the following case:

Mr. D., laborer, foreigner, aged 28, presented himself for operation for chronically enlarged cervical glands of large size which came on rather rapidly six years before; caused some general malaise and disturbance at times; soon reached the maximum in size; had remained about the same since, and had given him practically no disturbance. These enlargements involved the posterior and anterior chains of both sides, but larger on the left than on the right side. the latter being the most recent in involvement. As the patient presented himself the speaker was impressed by his remarkably robust, healthy general condition, a careful physical examination failing to uncover a sign of disease elsewhere. A diagnosis of tuberculous cervical adenitis was made by exclusion, with some hesitation because of his remarkably healthy general appearance.

He operated by the usual stereotyped method, as outlined by Plummer and Schroeder, first placing a provisional ligature around the very large internal jugular vein an inch above the sternoclavicular junction. The glands were

unusually hard, the periadenoid fascia being intensely tough, old, and entangled, causing the veins to become very tortuous and varicose. As he stripped the chain from the lowest part of the vein he noticed lying longitudinally on the muscles exposed by the collapsed vein at its point of provisional ligation a delicate, translucent envelope of fascia, about an inch long, which gradually grew larger, with a steady flow of opalescent fluid from above, until, when about the size of an ordinary match-stick, it slowly emptied itself from below upward. This emptying was not synchronous with the pulse, was not influenced by respiration, and was not vermicular. He had practically finished his dissection and was reviewing the whole field, seeking for stragglers which had escaped his eye and fingers, and had found one below his ligature close behind the sternoclavicular angle about the size of a small pea, and proceeded to work it loose with his finger, when there was a sudden welling of blood, a deep inspiration hiss, immediately followed by restless, tumultuous heart and breath, and the usual chest rasp, and foaming mucus from the mouth and nose of an air embolism. He at once stopped the opening in the vein and placed a snip forceps on it, leaving the forceps *in situ*, and then made a permanent double ligature of the vein above. In three or four moments the heart became quiet, respiration became calm, and he was enabled to finish the operation without further incident, the patient leaving the table in good condition, with a steady pulse of 108 and respirations 22, full and free. When the patient became fully awake he began to howl with agonizing pain in the lowest lateral area of the left chest, and a physical examination showed an area about the size of the palm of the hand, dull on percussion, with no fremitus, and a prolonged hissing expiratory sound. The voice sounds were ragged and of high note, not at all of the bronchial character of a pneumonia, nor were they of the bleating character of a bronchial obstruction or of a cavity in the lung. These physical signs only accompany a collapsed lung, and in this case he could understand the condition in no other way than that there was an infarction of some rather pretentious branch of the pulmonary artery. From this time on the patient went through all the varied and progressive stages of multiple foci of tubercular infection in his lungs, kidneys, peritoneum, pleura, eyes, brain, and meninges until on the 22d day after operation he succumbed to basilar meningeal invasion, his temperature recorded in the axilla being from 106·9 during the last twelve hours. This is his first personal experience with air embolism in practical surgery.

DISCUSSION.

Dr. M. L. Harris said that in removing a chain of tubercular glands from the neck he had a similar experience in so far as the laceration of the veins was concerned, and the air. It was on the right side, and a tear in the vein took place at the junction of the subclavian and the internal jugular. The entrance of air into the vein occurred, as manifested by the sound, the heart's action, etc., but it was at once plugged, and no bad result was noted.

Dr. Alexander Hugh Ferguson said that while he has not had a similar experience of air embolism on the operating table, he has had three cases of miliary tuberculosis following operations on the neck for tubercular glands. The patients were in an apparently healthy condition before the operation, so that he could say they were postoperative cases of miliary tuberculosis. The three cases were cited in detail.

Dr. D. A. K. Steele related the case of a woman, 46 years of age, from whom Senn removed all glands on the right side of the neck three years ago, and she was free from tubercular adenitis until three or four months ago, when the glands on the left side became involved. He made a typical dissection of the left side, removing the glands, noticed they were hard, and had a good deal of periadenitis and extending well down toward the mediastinum beneath the notch. There were two or three nodules away down and in a location where he found an inaccessible gland, apparently the last one. He did not like to leave it, and while fishing it out his attention was called to the same ominous

hissing sound as Dr. Morgan has described; in drawing up and teasing out the gland he had ruptured the vein deep down in an inaccessible place. The hissing sound continued. He filled the cavity with normal salt solution, which excluded air promptly, and followed Dr. Harris' method of putting in a conical plug, packing with iodoform gauze, finished the operation, and no ill results followed. The patient left the hospital yesterday perfectly well from the operation. Whether miliary tuberculosis would develop later he could not say.

Dr. D. W. Graham was called urgently once to the hospital to see a case that an outside physician had been operating on, and when he arrived the patient was dying. The account given was that in removing glands of the neck on the left side from under the clavicle there was sudden profuse hemorrhage, followed by an ominous hissing sound and struggling on the part of the patient. Artificial respiration and other local measures failed to revive the patient. The vein had been ruptured accidentally, and while attempting to control the hemorrhage the hissing sound was first heard. In this case air embolism he thought was undoubtedly the cause of death.

The subject was further discussed by Dr. E. J. Senn, and the discussion closed by Dr. Morgan.

THE USE OF TUBERCULIN IN SURGICAL TUBERCULOSIS.

JOHN C. HOLLISTER, M.D., CHICAGO.

DISCUSSION.

Dr. Edward H. Ochsner said they had treated a considerable series of cases of tuberculosis combining the tuberculin injections, under the control of the opsonic index, with the other recognized methods of treatment, and he is fully convinced that they have done appreciably better than a similar number previously treated without the aid of tuberculin. He believes they have had several cases which would have died had they not used this remedial agent. He recently discharged a woman suffering from tuberculosis of the skin who had been under vaccination treatment for six months. She had apparently recovered under this treatment, while all other methods, including *x*-ray, had not been successful. He believes that if tuberculin is used in conjunction with other measures in the treatment of tubercular joints, we will get a very much larger percentage of good function results.

TUBERCULOSIS OF THE KIDNEY.

M. L. HARRIS, M.D., CHICAGO.

DISCUSSION.

Dr. Alexander Hugh Ferguson recalled having had two cases of very advanced tuberculosis of the kidney, in one of which the left kidney was completely destroyed. In these two cases nature had obliterated the circulation to the kidneys, so that in removing them it was a simple matter to scoop out the kidney tissue; it was not necessary to apply any ligature to the pedicle. He looked up the literature very thoroughly at the time and found a number of cases reported. It is quite possible in these cases where a diagnosis is made of tuberculosis of both kidneys, the disease being more advanced in one kidney than in the other, that when the more involved kidney is removed the other kidney may not have been diseased at all, simply excreting the tubercle bacilli without actually being involved in the tubercular process.

Dr. A. J. Ochsner said that the recovery of a tuberculous kidney when the other organ has been removed, and the continuation of the progress of the tuberculosis in both kidneys when neither kidney has been removed, must be explained on the theory of hyperemia. It is known that with Bier's hyperemia the progress of tuberculosis can be stopped, and the disease can be cured in many parts of the body, and there is no doubt but that when one kidney is removed there is enormous hyperemia of the other kidney. This he has had an opportunity of demonstrating this year in a case in which during the removal of a carcinomatous uterus with the cautery he burnt off the left ureter. The right kidney never

secreted more than twelve ounces of urine in twenty-four hours after this accident, so that he felt satisfied that the woman could not live with this one kidney if he removed the other. As she had carcinoma, it did not seem worth while to resort to an abdominal section, and implant the burnt-off ureter into the bladder; but after six weeks this ureter closed because he had evidently burnt it up high enough to have cicatricial tissue form and close it, so that it was necessary either to implant the ureter into the bladder or to remove the kidney. At this time the right kidney did not secrete more than six ounces of urine in twenty-four hours. He removed the left kidney, notwithstanding this fact, because of the bad condition of the patient. It did not seem as though the more serious operation of implanting the ureter into the bladder would prove successful. From that time on the right kidney began to secrete more urine; it advanced steadily until the right kidney, which had not secreted more than twelve ounces of urine at any time in twenty-four hours, since the hysterectomy was performed, secreted one hundred and two ounces of urine in one day. This was the highest point reached, and then it settled down to between forty and sixty ounces permanently after that.

Dr. E. W. Andrews said that in two consecutive cases occurring within a month in which he thought it absolutely necessary to have the urine from the opposite kidney examined, and in which he had used the segregator, but considered catheterization more definitely and positively certain, he failed to get the catheter into the ureter or to get any urine. Following such a failure, if one is bold enough to extirpate a kidney for tuberculosis, it becomes necessary to know whether only the method has been perfect, or how it may be determined that the other kidney is functionating. Formerly it was recommended by Thorburn and others to incise the abdominal wall and palpate through the abdomen. Later experience has led him to adopt an entirely different route, namely, incision of the opposite loin in those kidneys he removes through the lumbar route. It is a comparatively simple matter to open both loins, examine both kidneys, and he thinks a functionating kidney can always be determined to be such by inspection. He does not believe that nephrotomy for tubercular kidney is a good procedure. He has in several cases taken out a kidney without visible external evidence of disease, and has found only a few discrete foci of caseation in it, but in no case has he regretted its removal.

Dr. Daniel N. Eisendrath referred to cases of so-called mixed infection with the colon bacillus or the staphylococcus albus plus the tubercle bacillus. He cited a case which he saw within the last two months, and which illustrated this point very well.

Dr. William Hessert presented a specimen which illustrated very forcibly one of the rare forms of tuberculosis of the kidney, namely, a form where a distinct focus is present in the kidney without any renal symptoms, without any urinary symptoms, and without any findings in the urine. He related the history of the case in detail.

Dr. William Fuller said that total nephrectomy, in a case where the disease is extensive throughout the organ, offers the only hope of a cure; but many tuberculous kidneys are not so widely involved as this. There may be but a single focus occupying one pole of the organ, which is always accessible and demonstrable, and measures less heroic than complete removal of the kidney should suffice for a cure under these circumstances. While his experience has never enabled him to do this, he has repeatedly examined kidneys removed for tuberculosis confined to a small portion of the organ, and has been convinced that partial removal of such organs would have brought about a cure.

Dr. S. C. Plummer asked Dr. Harris what his practice is in the case of horseshoe kidney, as he stated that he resorted to catheterization of the ureters.

Dr. Harris, replying to Dr. Plummer, said the point has been brought out a number of times as to whether it is impossible to inject a healthy kidney by catheterizing the ureters, but there are no cases in point. No one has been able to produce a case where this has happened.

UTERINE MYOMA.

Dr. E. C. Dudley showed a specimen of myoma of the uterus which he had removed from a colored woman, 40 years of age. The woman recovered without complication.

CRURO-SCROTAL HERNIA.

Dr. Alexander Hugh Ferguson reported a case of this kind occurring in a man, 47 years of age. The man had had the hernia for about thirty years. A truss failed to retain it in place, and at times the pain was so severe that it incapacitated him for all kinds of labor, mental as well as physical. On examination it was found that the mass in the scrotum was to the outer side of the cord, and that it emerged from the abdominal cavity below Poupart's ligament. No external abdominal ring could be felt. At the operation it was found that the inguinal canal on the right side, where the hernia was situated, was entirely absent. The hernia passed through the femoral canal into the scrotum. There was a cremaster muscle. The contents of the sac consisted of omentum and a small knuckle of bowel. The herniotomy was completed in the usual manner, and an inguinal canal was made through which the testis and cord were passed after having pushed back into the abdomen through the femoral opening. The internal oblique muscle in this case was attached throughout the entire length of Poupart's ligament.

JOINT MEETING OF THE CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY AND CHICAGO OPHTHALMOLOGICAL SOCIETY.

Meeting held Nov. 8, 1908.

Dr. A. H. Andrews, president of the Chicago Laryngological and Otological Society, in the chair.

SYMPOSIUM ON RELATION OF SINUS DISEASE TO DISEASES OF THE EYE.

"Diseases of the Nasal Accessory Sinuses Which May Involve the Eye," Dr. Norval H. Pierce. "Dependence of Extraocular Diseases on Affections of the Nasal Accessory Sinuses," Dr. Casey A. Wood. "Dependence of Intraocular Diseases on Affections of the Nasal Accessory Sinuses," Dr. F. E. Brawley. "Intraocular Involvement Due to Sinus Diseases," Dr. Henry Gradle.

DISCUSSION.

Dr. William L. Ballenger:—My most striking cases of ocular diseases due to nasal affections have come to me through Dr. Suker, who will report the cases.

Dr. William H. Wilder:—I was very glad to observe that Dr. Gradle merely mentioned that there is an association between eye diseases and accessory sinus affections, because it seems to me that sometimes the relationship is rather remote. It is not so difficult to determine an etiologic relationship between nasal and ocular affections, but I think it is much more difficult to determine that the cause of an ocular affection is in the accessory sinuses. It is true that in some cases the relationship is a closer one than in others, and we can understand how there may be a connection between sinus disease and retrobulbar neuritis, for instance, although I have never seen a case where I could say positively that it was caused by disease in the sphenoidal cells, or in the posterior ethmoidal cells. Yet such a condition may exist, and a keratitis, for instance, may be due to disease in some sinus. There are, however, coincidences which must keep us from jumping to conclusions. I think you will agree with me that no matter how careful an observer one may be, and no matter how large his clinical experience, he will find it difficult to say definitely that a certain disease of the eye in a given case is due to sinus disease.

We frequently have infection in the nose, and it is easy to understand how it may be carried to the eye either through the medium of the lacrimal apparatus or by means of the fingers, and we are all familiar with such cases. But direct

infection is more difficult and after the last word has been said in regard to sinus infection as a cause of eye diseases we will probably find that it is only a toxic affair, the result of toxins acting on the delicate structures of the eyeball.

I agree with Dr. Brawley, however, in this, that it is wise in all cases where the etiology is not quite clear to make a careful examination of the nose and its accessory cavities.

In this connection I wish to present a case which has some bearing on the subject under discussion. It is a case of acromegaly in a man, 36 years of age; he began to grow ten years ago, having been in good health up to that time. He increased in height from 5 feet 8 inches to 6 feet 2 inches. He now stoops considerably, owing to a kyphosis. He has all the signs of the disease. The skiagraph distinctly shows an enlargement of the sella turcica, the pituitary body and of the frontal sinuses.

Of 175 cases of acromegaly described by Hirtl, 52 per cent. showed eye symptoms. This man has pressure on the optic chiasm, and the result is an optic atrophy.

Dr. C. M. Robertson:—There are two divisions of diseases which may affect the eye through the medium of the accessory sinuses of the nose. The first is traumatism. If one of the sinuses is traumatized, especially the ethmoidal sinuses, an infection may follow involving the orbit or the globe. Several years ago I saw a patient who, while splitting wood, sustained an injury of the orbit just inside the globe from a flying splinter. A physician removed quite a large splinter of wood, and the patient apparently recovered. Thirteen years afterward the patient came to me with an eye fully exophthalmosed, with no symptoms, except that the eye was pushed down and out. I found a small sinus leading down into the orbit at about the place where the splinter entered. The patient had forgotten the accident. A muco-purulent discharge came from the nose originating in the middle meatus. On probing the latter I found rough bone and an increased flow of pus followed manipulation. I cleaned out the meatus and with a syringe forced fluid through it into the ethmoidal cells, with the result that the eye popped out much further than it did before the operation. I cleaned out the ethmoidal cells and found that I could pass a probe directly into the orbit over and under the optic nerve, feeling the nerve with the probe, and around the eye to the external wall of the orbit.

Although this man had had a discharge from the ethmoidal cells for thirteen years, there was no disease of the eye, which as to acuity of vision was equal to the companion eye. At the time of the operation I removed a large piece of wood, 1½ inches long and 3-16 of an inch wide, from the ethmoidal cells.

We may have cases of this kind following trauma in which there is an inflammation of both the optic nerve and the globe. In other cases the eye is affected by infection from pus in the nose or accessory sinuses following some other cause than trauma. It seems to me that most of the cases that we can class as diseases of the eye resulting from sinuitis are diseases in which the ethmoidal cells and the sphenoid cells are at fault. The posterior ethmoidal cells are in direct contact with the optic nerve, so that any affection of these cells may affect the tissues around them, or by pressure on the optic nerve by bulging sinus walls causing choked disc followed by atrophy.

In my experience there are a few cases in which the diseases of the frontal sinus affect the eye.

That brings us to the consideration of two kinds of sinuitis, suppurative and non-suppurative, which may cause similar symptoms.

Dr. George F. Suker:—I think that the discussion was well prefaced by Dr. Pierce's remarks. We must take into consideration the conformation of the head, and its relation to the various sinuses, and their relation to the optic nerve. Much depends on whether the head is small and narrow or large and wide, whether these sinuses, particularly the ethmoidal and sphenoidal cells, sustain a normal relation to the optic nerve. Quite a few patients have optic disease which gets well when the sinus affection is cured. Of course, it is a toxemia, the toxins being absorbed and carried around by the vicious circle described by Dr. Pierce.

It is a notable fact that abnormal conditions of these sinuses cause eye troubles.

Dr. Ballenger spoke of cases we had had. I will cite one of these. A well man, 32 years old, contracted an influenzal cold, but had no systemic infection. The right eye became absolutely blind; with the left eye he could not see fingers or recognize light. Personal history was negative. A thorough examination failed to reveal anything except the nasal condition. Dr. Ballenger cleaned out the sphenoids and ethmoids on one side, the left, and within forty-eight hours the patient could recognize fingers at two or three feet. From that time on he improved steadily, and at present has normal vision in that eye. He had an empyema of the sphenoid and ethmoidal cells on both sides. On the right side there was also much improvement, but not so great as on the left. The intraocular findings were a marked choked disc with hemorrhages. Both conditions cleared up in the right eye, but the atrophy probably occurred because the condition had been present quite a while.

Another case was that of a lady who had recurrent conjunctival edemas in the external palpebral angle whenever she had a cold. There was no pain in the eye, but the condition would hang on for weeks at a time. Dr. Ballenger cleared out the ethmoidal cells, and from that day there has been no recurrence of the trouble although the patient has had repeated attacks of cold.

There is no question about the connection between the eye and the accessory nasal sinuses in these cases. There certainly is a close anatomic relationship, vascular as well as lymphatic, between the two. It would be folly to say that optic neuritis or choked disc or intraocular hemorrhages or chorioiditis with no other findings should be caused by a sinuitis, but take these cases as a whole, and if the treatment of the ocular affection does not yield results, and if the rhinologic treatment is effective, it must be acknowledged that there is a closer relationship between the orbit and the sinuses than has hitherto been noted.

Dr. George E. Shambaugh:—There is certainly a very close anatomical relationship between the accessory sinuses of the nose and the orbit, and of the former with the optic nerve. The sinuses that come into close relationship to the orbit are the frontal sinuses, by orbital extension, the ethmoidal cells through the orbital plate, the superior ethmoidal cells when present, the antrum of Highmore. We have all seen cases of extension into the orbit of sinus empyemas showing that there must be a close connection between these two parts. Another condition which was pointed out by Dr. Robertson is the mucocele, but whether this can extend to the orbit is questionable. I doubt it, except in cases where there is congenital thinness of the walls of the sinus.

Whether it is possible for accessory sinus disease of any type to produce intraocular affections is another question. It may be possible, although we have no proof of it as yet. The fact that we do occasionally find intraocular disease in association with accessory sinus disease is not a definite conclusion that there is an actual etiologic relationship. We all know that intraocular diseases are frequently caused by other conditions. The mere fact that we find a relationship there is not positive evidence that the eye disease is secondary to the accessory sinus disease. We must be very cautious about forming hasty conclusions about connections of this kind. Nose and ear diseases have often been found associated, although there may be no relationship between the two. Nevertheless, many unnecessary operations are performed on the nose for this reason. So, too, if eye affections are attributed to disease of the sinuses, many unnecessary operations may be done on the latter in the hope of curing the former.

As to whether it is ever possible for disease of the posterior ethmoid cells or of the sphenoid sinuses to so affect the ocular nerve as to produce the diseases mentioned is rather doubtful. Take, for instance, the middle ear; there is a relationship between the nerve (facial) and the tympanum, but in the case of the eye nerve this happens only occasionally; it is not an anatomical condition. In the ear it is constant. Suppurative disease of the middle ear is far more frequent than accessory sinus disease, and yet any one who has much to do with the middle ear knows that it is very rare to find the facial nerve involved. If it is possible

for the optic nerve to be involved in disease of the accessory sinus it must be an extremely rare occurrence. I doubt whether many of us will have an opportunity to see such cases.

Dr. Thomas Faith:—I feel very much like placing myself in the same position with Dr. Wilder. I have been on the lookout for cases of retrobulbar neuritis due to sinus disease, but have not seen a case yet. I believe that in many cases of infection after cataract operation the infection is carried from the nose to the eye, the patient having ozena, or a suppurative sinus disease.

The benefit derived from operations on the ethmoid cells or on the middle turbinal, where eye symptoms are present, is in many instances undoubtedly due to the depletion at the top of operation. I saw that illustrated once in a case of severe iridocyclitis. The young man received a severe blow on the nose which was followed by considerable hemorrhage, and a pronounced improvement in his condition.

Dr. A. H. Andrews:—The pendulum is always swinging, and it seems to me that the ophthalmological pendulum is now swinging toward the nose. I am inclined to be conservative in my consideration of these subjects, and their relation to each other. I have had some experiences, however, that make me feel that there may be something more in this than most of us have thought possible. In two cases that I recall now I had an active conjunctival injection following exploration of the sphenoid cavity. It came on within fifteen minutes; disappeared within twenty-four hours. I do not think that it could be considered coincident. It was certainly due to the intranasal manipulations.

Rhinologists are constantly observing lachrymation, photophobia and pain in the eye as the direct result of intranasal manipulations. Since this is true I can see no reason why continued pressure in the nose or suppurative conditions in the nasal accessory cavities may not produce eye symptoms and even serious intraocular changes. I am therefore of the opinion that we will yet see a much closer relationship between diseases of the eye and nose and its accessory sinuses than have hitherto been recognized.

Dr. E. F. Snydecker:—Recently there appeared in a German ophthalmological journal a very interesting discussion as to how much the oculist should meddle with the nose. The views of some were against and those of others for such interference. I think there can be no question that the oculist should be a rhinologist, to a certain extent. I looked up my own records and found that from six to seven per cent. of cases of ocular headache, where the cause was supposed to be in the eye, were due to sinus trouble, as was demonstrated later. I am sure that I overlooked some cases, and that I did not know about others. Many cases of headache go directly to the oculist, and it is his business to determine which of these are due to the eye and which to the sinus inflammation. Certain examinations must be made by the oculist or he will overlook the cause of the condition in a marked percentage of cases. Every patient with ocular headache should have his frontal sinuses examined. We should always look at one-sided headaches with suspicion. Periodic headaches are suspicious, especially when coming on in the morning. Always look for a sinus involvement in such cases. Look into the nose for polypi; often the worst ocular headaches will disappear with the removal of such growths. Make a careful rhinologic examination for pus. I think that one examination is insufficient. I have seen cases where the nose was examined frequently and no pus was found until after a great number of examinations had been made. Whether the oculist wants to extend his efforts to diagnosticate to operative manipulation, whether he is to remove a middle turbinal, is a question that must be decided by the individual, but I do think that if we do not make these examinations we will miss the correct diagnosis in a large proportion of cases.

Dr. Joseph C. Beck:—I agree with the last two or three speakers. In quite a number of eye cases in my practice there was a direct association with sinus involvement. I have been impressed by one point in the treatment of sinus disease, the report of a large number of cases of ocular affections cured by the simple

passing of a probe, or by irrigation, or treatment of the antrum alone, and was rather astonished at the good results obtained. Usually, in sinus-disease, there is a combination, more than one sinus is affected, and one would not expect to get any results whatever from such incomplete treatment. I think that the association or connection between these affections is really a much broader one than the discussion so far has brought out.

Dr. E. Fletcher Ingals:—Some years ago I saw a patient who for two years had trouble with her eyes, so that she could not read. I found considerable hypertrophic rhinitis. I cauterized the inferior turbinal of one side and told her to go to an oculist for treatment of the eyes. She did not go to the oculist, but two weeks afterward her eye trouble had completely disappeared. I do not know what the relation was in this case, but presume it was reflex, due to pressure of turbinal.

Dr. J. E. Colburn:—Dr. Ingals cauterized a nose some years ago and immediately afterward the patient complained of low vision. He sent the patient to me, and I found the disc blurred and hyperemic. I assured the lady that after a few days the blindness would pass away. It did so within twenty-four hours, the hyperemia having disappeared entirely.

Another case that has made me rather timid about interfering was one in which a progressive atrophy had taken place. I could find nothing in the history, personal or family, to account for it. Vision was getting exceedingly low. I referred her to a rhinologist, who found frontal sinus disease, operated, and either coincident or otherwise, the vision rapidly lowered for a few weeks and never improved beyond what it had been at the time of the first consultation, although the nasal sinus condition improved. The atrophy in this case had been quite extensive.

I have so often seen a strange relationship between nasal and ocular diseases and it has put me on my guard. What the outcome is going to be can only be told in later years. We must swing with the pendulum. The present swing of the pendulum will give us a better knowledge of these diseases.

Dr. Norval H. Pierce (closing the discussion on his part):—At the Illinois Eye and Ear Infirmary, where doubtful cases are referred from the eye to the ear, nose and throat side, it is very rarely found that there is any connection between the eye symptoms and nasal disease. It is only with the greatest rarity that we find anything in the nose to account for the patient being referred to our side. There is, of course, a well-defined relationship between inflammatory diseases of the sinuses and the orbit. Neuritis following diseases of the posterior ethmoidal cells and of the sphenoidal sinuses is a very well-marked condition. The reflex conditions are about the only ones that can enter into doubt, and I believe that it is wise to preserve extreme conservatism regarding these cases, in order to prevent much unnecessary surgical work. Headaches caused by sinus trouble produce pain in the eye if the posterior ethmoidal and the sphenoidal cells are involved. Of course, headache may be caused by disease of the frontal and maxillary sinuses. It is dangerous to say that a sinus is diseased without external symptoms, that is, without pus coming from the region of the sinus. That there is a so-called occult or closed empyema, especially of the ethmoidal cells, no one will doubt, but these cases must be extremely rare, and the diagnosis can only be made on removing the middle turbinated body, and perforation of the ethmoidal labyrinth.

Dr. Henry Gradle (closing the discussion):—How frequently association of sinus disease and ocular diseases occurs can only be learned by clinical research in all cases of eye disease of uncertain etiology. We are now at the threshold of our studies in this connection. A one-sided headache, photophobia and uncomfortable sensation around the eye may all result from nasal conditions, but only as symptoms referred to the eye, and not as the expression of changes in the eye. Few cases of actual organic changes in the eye have been recorded in the literature. Of all cases of lacrimal diseases, more than 90 per cent. are due to extension from the nose, and less than 10 per cent. are due to a descending infection

from the conjunctiva. In orbital inflammation the extensive studies of Birch-Hirschfeld have shown that fully 60 per cent. of the cases are of nasal origin, possibly more if the nose had been examined thoroughly. Orbital diseases are not common. How many instances does the most industrious colleague see in his private practice during the year? In cases of optic nerve diseases it has become the fashion to attribute many of these affections to sinus involvement. A few cases have been reported where an operation proved decidedly effective, where the sinus was opened and found diseased, and when operation produced a cure of the eye affection. Such instances are rare, however.

I have not seen a single case of optic nerve inflammation following sinus disease. The few cases in the literature of intraocular diseases attributed to sinus lesions are generally not above suspicion. The four cases I have mentioned I collected from my own experience, dating back as far as seventeen or eighteen years. In two cases it was a coincidence, in which I can not say whether the sinus disease really caused the eye disease. In one case there was sufficient proof from the fact that the disease began to recede at once as soon as drainage was established, previous treatment having been without avail. Personally, I declare myself very much in favor of the comparative rarity of sinus affections as causes of extra- or intraocular disease; but such cases do occur, and it is the duty of the oculist to examine the nose in every doubtful instance, keeping in mind the possible connection between the eye and the accessory sinuses of the nose.

FOX RIVER VALLEY MEDICAL ASSOCIATION.

A regular meeting of the Fox River Valley Medical Association was held at the home of the Fox River Country Club at Geneva, Feb. 2, 1909. Thirty-five members and visitors were present. The morning paper, "Surgery of the Gall Bladder," was by Dr. Weller VanHook of Chicago, and was demonstrated on a freshly killed pig. A most effective dinner was served by the Country Club and at 2 p. m. Dr. Joseph Miller of Chicago lectured on "Some Heart Affections Not Due to Valvular Lesion." Drs. A. R. Reuer, C. W. Morrow and W. A. Uehren were admitted to membership.

MACOUPIN COUNTY.

The regular quarterly meeting of the Macoupin County Medical Society was held in the Masonic Reading Room at Carlinville, Jan. 26, 1909. The following members were present: From Carlinville: Drs. J. Palmer Matthews, Collins, Denby, Fisher, Corr, Davis and Bell. From Gillespie: Drs. King and Gross. From Benld: Drs. Renner and Pattison. From Virden: Dr. E. G. Motley. From Nilwood: Dr. Morgan. The minutes of the last meeting and the treasurer's report for the quarter were read and approved. The president and secretary were instructed to write to our congressman urging support of the movement for a National Department of Public Health; also to write to our state representatives urging them to support legislation that will give the state adequate registration of births and deaths, such as will be acceptable to the Bureau of the U. S. Census. The resignation of Dr. M. H. Farmer from active membership on account of ill health was accepted and his name placed on the honorary list.

The following resolutions were adopted:

RESOLUTIONS OF RESPECT.

WHEREAS, It pleased the Ruler of the Universe to remove from this life one who was a charter member of our society, Dr. John Pitt Matthews; therefore be it

Resolved, That we hereby express our appreciation of the work he has done for this society and the medical profession in his well-spent life.

Of his professional work and attainments we need not speak; his papers, debates and discussions in this society which the members have heard during his

connection with it speak for his experience and learning more than words of ours will do.

He was ever faithful to the interests of the profession and this society, shirking none of its labors and responsibilities and we are pleased to know that he shared in its honors, serving as our local president and being chosen from among us as president of the Illinois Medical Society. He always urged medical organization.

We will do well to emulate his devotion to his profession and strive to attain his ideals. We beg to extend the sympathy of our society to his bereaved family. Respectfully submitted,

WILLIAM M. GROSS,
L. H. CORB,
J. S. COLLINS.

MORGAN COUNTY.

The society held its regular meeting at the Public Library in Jacksonville February 11, at 8 p. m. Members present: Drs. Black, Day, Duncan, Gailey, Hairgrove, Hardesty, Milligan, Norris, Pitner, Stacy and Woltman. On account of the absence from the city of the president, Dr. Charles Cole, Dr. T. J. Pitner was chosen temporary chairman. "Fractures of the Upper Part of the Femur" was the subject for consideration and was presented under these topics: "Differential Diagnosis," Dr. W. P. Duncan; "Treatment," Dr. F. A. Norris; "Medico-legal Aspects," Dr. P. C. Thompson. Dr. J. W. Hairgrove led the discussion.

GEORGE H. STACY, Secretary.

STEPHENSON COUNTY.

The Stephenson County Medical Society met at the courthouse in Freeport, Thursday, Jan. 14, 1909. The following members were present: Drs. Arnold, Burns, Clark, Kober, Leitzel, Lius, Morrison, Moore, Peck, Salter, Stealy, Smith, Snyder, Thompson and Torey. Dr. G. E. Mershon of Mt. Carroll was a visitor. A change in the constitution was effected, making the fiscal year end December 31 so as to comply with the state organization. Dr. A. E. Smith, who attended the International Congress on Tuberculosis, gave an interesting report of that meeting.* Dr. W. B. Peck gave an interesting account of his experiences in the Vienna and Berlin medical clinics. Dr. V. F. Snyder gave a report on his personal experiences in the use of various tuberculin reactions.

The Physicians' Club of Freeport met Thursday evening at the courthouse, at which meeting an election of officers was held resulting as follows: President, Dr. A. E. Smith; vice-president, Dr. B. A. Arnold; treasurer, Dr. R. J. Burns; secretary, Dr. E. H. Best. It is the purpose of the organization to hold monthly meetings and take up a regular line of study. Steps are being taken to secure permanent quarters for the sessions. Members present were: Drs. Arnold, Best, E. H. Burns, Clark, Moore, Morrison, Mease, Rideout, Rosensteil, Stealy and Snyder.

VERMILION COUNTY.

Meeting of Jan. 11, 1909.

The regular monthly meeting of the Vermilion County Medical Society was held on Jan. 11, 1909. The following officers were elected at the December meeting for the year 1909: President, Dr. S. C. Glidden, Danville; vice-president, Dr. R. S. McCaughey, Hoopeston; secretary-treasurer, Dr. George Steely, Danville; delegate, Dr. E. B. Cooley, alternate delegate, Dr. Benjamin Gleeson, Danville; censors, Drs. A. M. Miller and Rachel Cooper; program committee, Drs. Glidden, Sol. Jones and Gleeson; committee on public health and legislation, Drs. Clark, F. N. Cloyd and L. B. Russell.

* For report see page 303.

The program for the evening of Jan. 11, 1909, was very interesting and instructive, and included a stereopticon lecture and talk by Dr. Emil G. Beck of Chicago, Ill., on "Bismuth Paste Injection of Tuberculous Sinuses, Fistulas and Abscesses," giving the methods used and the results of treatment of his many cases with this new method, of which he was the originator. The night was a very disagreeable one for good attendance, but nevertheless thirty-one members were present.

Dr. R. D. Cruikshank presented a paper on "Tuberculosis of Bones and Joints," and Dr. W. A. Cochran gave a brief talk on "Tuberculosis from the Opsonic Standpoint," more from his own observations. Both of these papers were very interesting and enjoyed by all present.

The Board of Censors reported favorably on the name of Dr. H. E. Baldwin of Sidell, Ill., and he was elected to membership in this society. The members present were: Drs. Gleeson, Guy, Miller, Kingsley, M. Downs, Sims, Williams, McIntosh, Cooper, Fithian, Cochran, Dale, G. M. French, Solomon Jones, Leo Fairhall, Hatfield, Barton, F. N. Cloyd, Michaels, Reagan, Cruikshank, Crist, Cooley, E. E. Clark, Fisher, Steely, Glidden, Clements, Current, Wilkinson.

Meeting of Feb. 8, 1909.

The regular monthly meeting of the Vermilion County Medical Society was held at the City Hall on Feb. 8, 1909. It is the plan of the program committee to arrange with special men from other cities for a place on the program of each monthly meeting during the year. Thus far, several good men have signified their willingness to give us papers on special subjects, and it will be a great treat to our society members to hear these men each month. At the January meeting we had with us Dr. Emil G. Beck of Chicago, and at the February meeting Dr. C. U. Collins of Peoria who addressed us on the "Evolution of the Abdominal Incision." Dr. Collins' paper was very original, as he has a special incision of his own for entering the abdomen, and, in presenting his incision, he gave us the anatomy of the abdominal wall, the history of other incisions and their advantages and disadvantages. A vote of thanks was given Dr. Collins for presenting his excellent paper to the society.

Dr. R. L. Hatfield of Danville was next on the program, who took for his subject a "Report of a Case of Banti's Disease." This paper was very interesting and the case worked up from a scientific standpoint.

The next paper of the evening was by Dr. Charles E. Wilkinson of Danville on "Fibromyoma, Complicated by Pregnancy." Dr. Wilkinson handled this subject in a very thorough manner. He gave various statistics concerning this subject, at the same time giving his own experiences and showing specimens of his various cases.

The discussion of the three papers was opened by Dr. A. Merrill Miller of Danville and Dr. R. S. McCaughey of Hoopeston. After a thorough discussion of the papers, Dr. R. S. McCaughey presented a patient with "Lichen Planus," the disease following an injury received by a railroad spike.

The Board of Censors reported favorably on the names of Dr. C. H. Evans, Danville, and Dr. A. M. Earel of Hoopeston, and they were then elected to membership in the society. Members present were: Drs. Hatfield, Cruikshank, Michael, Wilkinson, Russell, Clark, Hoffman, R. N. Cloyd, Crist, Leo Fairhall, Fithian, Glidden, Guy, Steely, Clay Gleeson, Dale, F. N. Cloyd, Mason, Cooper, Miller, McCaughey, Tennery, M. Downs.

GEORGE STEELY, Secretary.

WABASH COUNTY.

The regular meeting of the Wabash County Medical Society was held Jan. 26, 1909, at 3 p. m., at Dr. Mercer's office, Mt. Carmel. The meeting was called to order by President Dr. C. E. Gilliatt. The minutes of the regular meeting Oct. 27, 1908, and of special meeting Dec. 21, 1908, were read and approved. Dr.

C. E. Gilliatt read a very interesting and instructive paper on "The Differential Diagnosis of Gastric Ulcer and Carcinoma." Dr. J. J. McIntosh led in the discussion of "Gastric Carcinoma," and was followed by all present and reports of cases occurring in the practice of each.

The attendance was small, but all felt fully repaid for the time given up for the meeting.

THE DIFFERENTIAL DIAGNOSIS OF GASTRIC ULCER AND CARCINOMA.

C. E. GILLIATT, M.D., ALLENDALE, ILL.

The differential diagnosis between ulcer and carcinoma of the stomach is in some cases simplicity itself; in others it is replete with difficulty. In the first place, let us consider the value of age and sex as etiological factors in diagnosis. This is a question which can be solved only by the statistical method. And here we are on safe ground. The relative frequency of gastric ulcer in men and women according to the reports of the Westminister Hospital from 1884 to 1900, a period of seventeen years, shows that of 397 cases of gastric ulcer seen in the wards, 69 were in men and 328 in women. Welch, as the result of 1,699 cases of gastric ulcer, met with at autopsy, found that 40 per cent. were in men and 60 per cent. in women. Fenwick, St. Mary's Hospital, out of 383 cases, found 95 in men and 288 in women. Lebert, of 209 cases diagnosed during life, found 47 in men and 162 in women. Habershon out of 201 cases, found 74 in men and 127 in women. Martin, from the records of 171 cases, gives 27 in men and 144 in women. Anderson, of 35 cases found 3 in men and 32 in women. Tabulating these results we get the following figures:

Welch (number of cases)	1,699;	men,	680;	women, 1,019
Murrell (number of cases)	397;	men,	69;	women, 327
Fenwick (number of cases)	383;	men,	95;	women, 288
Lebert (number of cases	209;	men,	47;	women, 162
Habershon (number of cases)	201;	men,	74;	women, 127
Martin (number of cases)	171;	men,	27;	women. 144
Anderson (number of cases)	35;	men,	3;	women, 32

This gives a ratio of one man to two and a fraction of women. Now, let us employ the same method of investigation with regard to age.

The following is the observation of age as the result of the analysis of the 397 Westminister cases:

Under 5 years	0	30 to 40 years	104
5 to 10 years	2	40 to 50 years	32
10 to 20 years	62	50 to 60 years	10
20 to 30 years	182	Over 60 years	50

Welch gives the following tables of 607 cases collected from hospital statistics:

1 to 10 years	1	60 to 70 years	84
10 to 20 years	32	70 to 80 years	35
20 to 30 years	119	80 to 90 years	6
30 to 40 years	107	90 to 100 years	0
40 to 50 years	114	Over 100 years	1
50 to 60 years	108		

Martin, in his table, distinguishes between males and females, but by adding the cases together, we get the following figures:

Under 20 years	15	40 to 50 years	25
20 to 30 years	75	50 to 60 years	14
30 to 40 years	38	Over 60 years	4

Fenwick differentiates between acute and chronic ulcers, but by his table we arrive at the following conclusions:

10 to 20 years	9	50 to 60 years	12
20 to 30 years	17	60 to 70 years	6
30 to 40 years	16	70 to 80 years	1
40 to 50 years	28		

By combining the results we get the following table:

Under 20 years	121	40 to 50 years	199
20 to 30 years	393	50 to 60 years	144
30 to 40 years	265	Over 60 years	142

This gives the preponderance of cases in the decade 20 to 30 years, which is in accordance with the view commonly held. Let us apply the same mode of investigation to carcinoma.

In the Westminister Hospital in the seventeen years 1884 to 1900, there were 92 cases in the wards, and of these 60 were in men and 32 in women. A ratio of 2 to 1. Reiche reports the statistics at Hamburg, 1872 to 1898, and finds that of 4,237 deaths from cancer of the stomach, 2,387 were in males and 1,850 in females. Welch, of 2,214 cases collected from hospital statistics, and nearly all confirmed by autopsy, gives 1,233 males and 981 females. Osler and McRae, out of 151 cases, gives 126 in males and 24 in females. A proportion of 5 to 1. Martin found in 53 cases, 32 in men and 21 in women. Combining the numbers we get:

Welch (number of cases)	2,214;	men,	1,233;	women,	981
Reiche (number of cases)	4,237;	men,	2,387;	women,	1,850
Osler and McRae (number of cases)	150;	men,	126;	women,	24
Murrell (number of cases)	92;	men,	60;	women,	32
Martin (number of cases)	53;	men,	32;	women,	21

Sum total gives a ratio of 6 to 5.

Brinton thought that gastric cancer was twice as often in men as in women, but Welch, with his larger statistics, places the ratio at about 5 to 4, and considers the difference so slight that no importance can be attached to it.

The age of which gastric carcinoma occurs in 92 cases in Westminister Hospital, there was no patient under the age of 30.

In the decade 30 to 40, 11 cases.
In the decade 40 to 50, 33 cases.
In the decade 50 to 60, 25 cases.
And over 60, 23 cases.

Reiche collected 600 cases from various sources, but does not tabulate the results. He states that the average age of death was 50, and that the maximum number of cases, 162, or 2/7, occurred between 50 and 60. Both Welch and Reiche have published series of cases, and from their series of cases it will be seen the majority of cases occur between the ages of 50 and 60. The conclusions at which we arrive are that gastric ulcer is from two to three times as common in women as it is men. And that it is most frequent between the ages of 20 and 30 years. On the other hand, gastric cancer is slightly more common in men and the majority of cases occur over the age of 50. Although statistics are a great aid, the ultimate decision in any particular cases must be based on a consideration of the symptoms presented by the individual patient. It is very difficult at times to tell whether the cancer or ulcer is in the pylorus, lesser curvature, cardia or in the posterior or involves the whole stomach.

The pain of gastric ulcer is always very severe, and is described as burning, boring or gnawing in character, and in the more characteristic forms comes on in intense paroxysms.

Pain is not only felt in epigastrium, but radiates to back and sides. In many cases the two points of epigastric pain and dorsal pain, about the level of dorsal vertebra, are very well marked. Pain is always increased by pressure, and many patients suffering from this malady have to discard the use of corsets. It is also increased by taking food and relieved by vomiting. The intensity of the pain is increased by posture, and Brinton thought the decubitus afforded the best indications of the lesion, although this is not the case.

The pain of cancer is less severe in character, and there are fewer intervals during which no pain is felt in the epigastric region. The areas of skin tenderness are referred, as Head has shown, to the region between the nipple and the umbilicus in front and behind from the fifth to the twelfth thoracic spine. The appetite is almost invariably poor. Brinton records a case of an inveterate smoker, who suddenly developed a distaste for tobacco. There were no definite signs, but a diagnosis of carcinoma was made, and this turned out to be correct. In gastric ulcer the appetite is not impaired, although the patient abstains from eating on account of the pain which food engenders.

Vomiting in gastric ulcer comes on soon after a meal, and affords relief to the pain. In cancer it occurs, not after meals, but once or twice a day, or at longer intervals, the quantity evacuated being considerable. Hare says vomiting due to gastric ulcer is preceded by pain, and is generally brought on by taking food and so occurs soon after eating. The food, therefore, is only slightly digested and evidences of fermentation are absent to a great extent. If blood is present it is nearly always bright red and in considerable quantity, and indicates that a hemorrhage has recently taken place from the surface of an ulcer. The vomiting of gastric cancer at first consists of particles of food, mucus, water and sometimes bile. The vomit may be tasteless or sour from fermentation and may have an offensive odor from similar cause. Often it contains blood, either in bright red streaks or as a brownish red fluid, or in similar colored clots, which may be brown when they have been in the stomach for some time. Often the exuded blood changed by mixture with the stomach contents looks like coffee grounds. This coffee-ground vomit is not pathognomonic of gastric cancer, but is very characteristic of this disease. There are numerous other causes of vomiting of blood than gastric ulcer or cancer.

In ulcer the hemorrhage is distinctly intermittent, and after one considerable evacuation there may be no more bleeding for some time. In cancer large quantities of blood are rarely vomited, although it may frequently occur, often only after short intermission. Flatulence is common in both conditions, but in gastric ulcer the flatus has no offensive odor, while in cancer it is extremely disagreeable. The tongue in gastric ulcer varies much in appearance; it is often red, clean and moist, but when there is marked anemia it is pale and flabby. In cancer it is covered with a thick fur. Probably the most important diagnostic fact is the presence or absence of an abdominal tumor. In gastric ulcer there is no tumor, although there may be a thickened pylorus, the result of the formation of cicatricial tissue from the healing of previous ulcers, may be detected. In cancer the tumor is much more evident; it is frequently palpable, presenting an uneven surface, and is movable and painful on pressure.

Many physicians do not make a diagnosis of cancer unless a tumor can be detected, but this is going too far, for a tumor may not be palpable during life, even in a hot bath, owing to the fact of its being adherent to the under surface of the liver. The detections of secondary deposits in the liver, or any other organ or any of the glands, except the salivary glands, would point to malignant disease. The facial aspect may aid in a differentiation; in gastric ulcer the patient is usually anemic; in cancer there is a drawn anxious look, the result of much suffering.

Chemical examination of the vomited matter not uncommonly affords valuable evidence; in gastric ulcer, hydrochloric acid is usually present and no lactic acid is to be found; in cancer the hydrochloric acid is usually absent and lactic acid may be present. Much importance has been attached to the discovery of the Oppler boas bacillus in the vomited matter, and although not pathognomonic of cancer, its presence is always very suspicious. In fifty-six cases on record of gastric carcinoma, it was detected in all but three. In addition to the bacillus, there may be tissue fragments of the neoplasm.

For convenience of reference, these facts are arranged in tabular form:

	Ulcer.	Cancer.
1. Sex	More frequent in women....	Slightly more common in men.
2. Age	20 to 30 years.....	Over 50 years.
3. Facial expression	Fresh or may be cachetic...	Sallow; marked cachexia; drawn look, expressive of much suffering.
4. Temperature .	Slightly febrile.....	Often subnormal.
5. Tongue	Red, clean and moist, or pale and flabby.	Thickly coated.
6. Appetite	Not impaired, but patient afraid to eat on account of pain.	Always bad.

7. Epigastric pain.	Severe, worst after meals; relieved after vomiting.	Constant.
8. Flatulence ...	None or not offensive.....	Frequent and with fetid odor.
9. Vomiting	After meals	Once or twice a day or longer intervals. Often in large quantities.
10. Hematemesis..	Profuse bright red.....	Small in quantity; coffee ground, often offensive.
11. Vomit water..	HCl increased; lactic acid absent.	HCl absent; lactic acid present; Oppler boas bacillus.
12. Urine	Small in amount; contains indican.	Contains indican and acetone.
13. Tumor	None or only thickened pylorus.	Palpable, uneven, painful on pressure.
14. Duration	Indefinite	6 to 12 months.

WAYNE COUNTY.

The Wayne County Medical Society met at Dr. Walters' office in Fairfield, Thursday, Jan. 21, 1909, President W. M. Johnson in the chair. The session was called to order promptly at 10 a. m. Members present were Drs. W. M. Johnson and C. E. Johnson of Johnsonville, J. L. Young of Rinard, C. O. Truscott of Cisne, B. E. Garrison of Wayne City and N. J. Hall, T. J. Hilliard, W. C. Sibley and J. P. Walters of Fairfield.

This was the annual meeting, and the time for the election of officers for the ensuing year, but it was decided that this and some other business pertaining to the welfare of the society should be deferred to next meeting so the entire time could be devoted to the program of the day. The following is the program:

"Up-to-date Treatment of Acute Lobar Pneumonia," Dr. C. O. Truscott. Reviewed by Dr. J. D. Harlan. "Differential Diagnosis and Treatment of Bronchopneumonia in Children," Dr. J. E. Dixon. Reviewed by Dr. T. J. Hilliard, "Differential Diagnosis and Treatment of Follicular Tonsillitis," Dr. C. W. Sibley. Reviewed by Dr. N. J. Hall. "Diagnosis and Treatment of Erysipelas," Dr. J. P. Walters." Reviewed by Dr. C. E. Johnson.

Dr. Truscott led off on the subject assigned him. It is presumed that every member of the society can diagnose a case of pneumonia, so he was limited to the treatment of this disease. He contrasted the methods of to-day with that of former years, showing the advantages and disadvantages of each. The method of to-day is more conservative than formerly, in the days of bleeding, sweating and large doses of calomel and other drugs. His reviewer not being present, opportunity was given to all present to comment on the subject as treated by Dr. Truscott, and a general discussion of the subject was kept up to near the noon hour. The importance of this subject will be more appreciated when we consider the fact that pneumonia causes the death of more people in Southern Illinois than any other disease.

The secretary then read a paper on the subject assigned him, after which the society adjourned to meet promptly at 1 o'clock.

The society met as per adjournment, the paper read by the secretary was reviewed by Dr. C. E. Johnson. The review of the paper and the general discussion of the subject was continued to the time the physicians out of town had to take their trains home.

Adjourned to meet in Fairfield, April, 1909.

J. P. WALTERS, Secretary.

NEWS OF THE STATE.

PERSONAL.

Dr. and Mrs. Milton E. Eisenstadt, of Chicago, have returned from Europe.

Dr. Spencer S. Fuller, Paxton, sailed for Vienna, via the Mediterranean, on February 9.

Dr. J. A. Hoffman, of Pesotum, Ill., has returned from a course of study in Vienna, Austria.

Dr. Philip H. Hesse, interne at the Illinois Northern Hospital for the insane, Elgin, has resigned.

Dr. Albyn L. Adams, Jacksonville, vice-president of the trustees of the Passavant Hospital, has resigned.

Dr. A. H. Geiger, 110 Clybourne Avenue, Chicago, has returned from Europe and will resume his practice.

Dr. C. E. Kelso, of Champaign, Ill., has become a member of the Champaign County Medical Society.

Dr. Max F. Clausius, formerly of Jefferson Park, has been appointed physician of the Siletz Agency, Siletz, Ore.

Dr. Jesse M. Monan, Chicago, has recently returned, after eleven years spent as a medical missionary in Persian Kurdistan.

Dr. E. V. L. Brown, Chicago, who has been studying with Professor Fuchs in Vienna for a period of five months, has returned home.

Dr. William D. Hohman has been elected president, Dr. Francis O. Lowe, vice-president, and Dr. H. Nelson Heflin secretary of the staff of St. Francis Hospital, Kewanee.

Dr. and Mrs. Alexander H. Ferguson, of Chicago, are visiting their old home in Winnipeg, where Dr. Ferguson is to address the alumni of the Medical Department of the University of Manitoba.

Dr. Robert D. Luster, formerly of Granite City, Ill., has returned from abroad and opened offices in 1201-2 Venetian Building, Chicago. Practice will be limited to *x*-ray diagnosis and treatment.

Dr. A. Jordan, for several months past house physician at the Rockford Hospital, resigned his position January 24 and has gone to Hudson, S. D., where he will take the practice of a well-known physician.

A first aid legion on military basis is to be organized by the Illinois Branch of the American National Red Cross Society. Dr. Gustavus M. Blech has been appointed director-in-chief, and Dr. Louis L. McArthur chairman of the executive committee.

The annual meeting of the stockholders of the Chicago Eye, Ear, Nose and Throat College was held recently. The old board of directors, consisting of Drs. Wm. A. Fisher, A. G. Wippern, H. W. Woodruff, Thomas Faith and J. R. Hoffman, were re-elected. The college is entering upon the thirteenth year of its existence, and reports of the officials show a very satisfactory condition of the college and hospital.

NEWS ITEMS.

In the recent entertainment given at the Colonial Theater, Chicago, for the benefit of the Chicago Charity Hospital, over $1,500 was netted.

An examination for chief of the medical staff of the Dunning institutions was held March 2 and 3 at the Cook County Building, Chicago. The salary is $2,500, with board, room and washing.

In the Franklin County Circuit Court, in Benton, February 2, Dr. Benjamin F. Brayfield, Mulkeytown, was exonerated of the charge of causing the death by poison of Reuben F. Parrish, of that place.

In the suit for $25,000 damages brought by Edward L. O'Neil against Dr. Lars P. Jacobson, Kankakee, in which malpractice in a case of varicocele was claimed, the jury is said to have rendered a verdict in favor of the plaintiff and awarded $400 damages.

The Practitioners' Hospital has changed its name to Abraham Lincoln Hospital. Dr. Michael Goldenburg, 72 East Madison Street, director of clinics in the dispensary attached to the hospital, announces that there are eight vacancies on the staff.

The following officers were elected at the annual meeting of the Chicago Tuberculosis Institute: Dr. Henry B. Favill, president; Drs. Frank Billings and Robert H. Babcock, vice-presidents; David B. Forgan, treasurer; Sherman Kingsley, secretary. Traveling tuberculosis exhibits are the latest announcements of the institute.

Lake County Tuberculosis Institute, four miles north of Waukegan, which was started in July last, now has a capacity of eighteen in winter and thirty in summer. Organization of the institution was effected September 3. Dr. John C. Foley is president, Dr. William C. Bouton, secretary, and Dr. W. H. Watterson, manager-treasurer and physician.

Dr. Douglas Argyll Robertson, famed throughout the world on account of the pupillary phenomenon bearing his name, died recently at Gonda, India, aged 71. He was formerly lecturer on diseases of the eye at the University of Edinburgh, and was an ex-president of the Ophthalmological Section of the British Medical Society. At the time of his death he was honorary surgeon-oculist to the king.

Dr. J. A. Womack, of Karbers Ridge, Hardin County, Ill., is a member of the State Senate and has been appointed a member of the committee on charitable, penal and correctional institutions. As Dr. Womack has been a member of the Medical Legal Committee of the state society from his (Hardin) county he will undoubtedly be able to do good service on this and other committees to which he may be appointed.

Declaring certification of milk in Chicago a failure, the Chicago Medical Society has appointed a milk commission, consisting of Drs. Isaac A. Abt, Marcus P. Hatfield, Frank S. Churchill, James W. Van Derslice, Charles S. Bacon and Samuel J. Walker, to take charge of certified milk and furnish labels to dairies that have complied with regulations. The commission will appoint a physician whose duty shall be to look after and testify to the health of employés of every dairy whose milk is to be certified. A chemist and bacteriologist will also be appointed to examine the milk.

Darwin anniversary addresses are being given under the auspices of the Biological Club of the University of Chicago. The lectures are open to the public, and the following are the remaining lectures of the courses: March 3, "The Influence of Darwinism on Psychology," Prof. J. R. Angell; March 4, "The Theory of Individual Development," Prof. F. R. Lillie; March 10, "The Evolution of Religion," Prof. Shailer Mathews; March 11, "Darwinism and Experimental Methods in Botany," Prof. D. T. MacDougal; March 17, "Evolution in Language and in the Study of Language," Prof. C. D. Buck; March 18, "Selection, Mutation, and Orthogenesis," Prof. C. O. Whitman.

The third congress of the American School Hygiene Association was held in Chicago, February 22 to 25. The meeting was held with that of the Division of School Superintendents of the National Education Association. On the first day there was a meeting of the executive committee and the council. On February 23 the president, Dr. Henry P. Walcott, chairman of the Massachusetts State Board of Health, delivered his annual address, and the Committee on the Status of Instruction in Hygiene in the Schools and Colleges of America made its report, and during the three active days of the meeting many papers were presented by prominent educators and professional men dealing with school hygiene, prophylaxis and medical inspection.

The physicians of Elgin, Ill., to the number of twenty-six, have signed an agreement to limit their evening work, in the following language:

ELGIN, ILL.

We, the undersigned physicians of Elgin, believing it to be unnecessary to be in our offices more than three evenings each week; that to ourselves and our families we owe more of our time than we are able to give under present arrangement of office duties; and believing also that we are entitled to some recreation ourselves, and respite from professional duties (thereby making our work more efficient); and believing that a curtailment of evening office hours will in no way work a hardship or an inconvenience to the citizens of Elgin, do hereby agree to observe evening office hours on Tuesday, Thursday and Saturday evenings only throughout the year (special appointments excepted). Signed:

MEDICAL SOCIETY NOTES.

The Winnebago County Medical Society elected the following officers at their meeting, January 12: President, Dr. F. H. Kimball; vice-president, Dr. W. Grant Hatch; secretary, Dr. F. W. Hanford; censor, Dr. Howells, Winnebago.

At a recent meeting of the South Chicago Branch of the Chicago Medical Society plans were discussed for holding a charity ball for the purpose of raising funds for the benefit of the new South Chicago Hospital, located at 739 Ninety-second Place, which has been recently dedicated. The hospital was built at a cost of $25,000.

The annual meeting and dinner of the Chicago Laryngological Society was held at the Calumet Club on January 26. The following officers for the ensuing year were elected: President, Henry Gradle;

vice-president, Charles M. Robertson; secretary-treasurer, F. Gurney Stubbs; councilors, A. H. Andrews, J. G. Wilson and Elmer L. Kenyon; councilor to the Chicago Medical Society, Arthur M. Corwin.

The Chicago Medical Society has announced a joint meeting to be held March 31, 1909, with the American Pharmaceutical Association. The *Bulletin* of the Chicago Medical Society for February 20 gives the following announcement: "The ninth decennial revision of the Pharmacopeia is approaching. It is time that the active minds of the profession turn their attention to the question, How can our Pharmacopeia be improved? Heretofore the medical profession has taken but a lukewarm interest in the Pharmacopeia and its revision. The pharmacists deserve the credit for having been most active in its elaboration, while physicians have been most active in criticizing the Pharmacopeia after its revision. Now, why can we not have the practitioners' criticisms before the revision? This is what such meetings as the one to be held on March 31 ought to accomplish. What has perhaps kept physicians from taking as much interest in the pharmacopeial revisions as they might reasonably be expected to is the feeling that they have no share in the work and no influence in directing it. Nothing can be further from the truth. At the meeting announced it is expected that five of the twenty-five of the committee of revision will be present. They are to act as your representatives. They are anxious to receive your criticisms and your suggestions. It is intended that this meeting be especially devoted to a discussion of principles that are to govern the forthcoming revision. Therefore, if you have anything to offer for the improvement of the Pharmacopeia be sure to attend this meeting. If you have nothing to offer, come and hear what others have to say on this subject, so that you may at least have been present at a discussion that will influence the framing of this work. In that way you, as a physician, may feel that the Pharmacopeia is your Pharmacopeia."

PUBLIC HEALTH.

Scarlet fever has been reported at Marseilles, Ill.

Scarlet fever has been threatening at Mattoon, Ill.

Scarlet fever has been reported as epidemic at Aurora.

Measles have been reported at Silvis, Hopkins and Winsip.

Several cases of typhoid fever have been reported in Evanston.

Diphtheria has been reported at the Anna Milliken Home at Decatur.

Several schools in Union County have been closed on account of diphtheria.

The schools at Lane, Ill., have been closed on account of an epidemic of scarlet fever.

Smallpox is reported at Farmersville, Rushville, Grant Park, Kingston and Groveland Township.

The Washington Grove School at Kellerville was closed on account of the threatened epidemic of scarlet fever and diphtheria.

At Pekin strict quarantine has been maintained on account of an epidemic of smallpox. Canton has also been threatened with the epidemic.

The Danville Physicians' Club, recently organized, has elected the following officers: President, Dr. Charles F. Wilkinson; vice-president, Dr. A. Merrill Miller; secretary-treasurer, Dr. Benjamin Gleeson.

At Cairo, Ill., the board of education has been enforcing the vaccination regulations against all children who attend the schools. The board can not compel vaccination, but it can prevent the attendance of children who are not vaccinated.

The Illinois State Board of Health has published in their *Bulletin* of November, 1908, a register of physicians outside of Chicago, giving the name, state medical society to which they belong, address, college of graduation, year of graduation and year of license to practice in Illinois.

Smallpox has been reported in the following counties: Alexander, Champaign, Christian, Clinton, Franklin, Fulton, Jackson, Jasper, Kankakee, Macon, Macoupin, Marion, Mason, Massac, Mercer, Montgomery, Peoria, St. Clair, Sangamon, Stevenson, Tazewell, Union, Vermilion and Williamson.

At the annual meeting of the Brainerd District Medical Society, held at Petersburg, January 28, Dr. John M. Wilcox, Clinton, was elected president, Dr. Don W. Deal, Springfield, vice-president, and Dr. Harry S. Oyler, Lincoln, secretary. The next meeting of the society will be held in April at Lincoln.

The *Bulletin* of the Department of Health in Chicago makes the following report for the month of January: During the month of January 2,697 deaths were reported to the Bureau of Vital Statistics. This total yields a per annum rate of 14.28 per 1,000 of population, the second lowest rate ever recorded in this city during January. The lowest January rate previously recorded was 13.88 in 1898. The total reported deaths were 399 less in January a year ago, but they exceed the reports of December by 249. As compared with January 1908 there were 311 fewer deaths from the impure air diseases—pneumonia, bronchitis, influenza and consumption; 6 fewer from the acute contagious diseases; 17 fewer from typhoid fever; 63 fewer from the nervous diseases, and 8 fewer from the diseases of the heart. There were increases from the diarrheal diseases, apoplexy, violence and Bright's disease.

Statement of Mortality: Deaths *reported* during the month of January, 1909, compared with the *reported* deaths of the preceding month and with the *reported* deaths of the corresponding month of 1908. Death rates computed on United States Census Bureau's figures of midyear populations—2,224,490 for 1909, 2,166,055 for 1908.

	Jan. 1909	Dec. 1908	Jan. 1908		Jan. 1909	Dec. 1908	Jan. 1908
Total deaths, all causes	2,697	2,448	3,096	Diarrheal diseases	163	149	149
Annual death rate per 1,000	14.28	13.31	16.83	Under 2 yrs. of age	138	126	130
Sexes—				Over 2 yrs. of age	25	23	19
Males	1,496	1,349	1,704	Tuberculosis—all forms	332	270	362
Females	1,201	1,099	1,392	Of lungs	284	239	312
By color—				Other forms	48	31	50
White	2,605	2,383	3,000	Cancer	125	141	127
Colored	92	65	96	Nervous dis.—total	76	72	137
Ages—				Convulsions	4	4	24
				Meningitis, simple	17	10	28

	Jan. 1909	Dec. 1908	Jan. 1908		Jan. 1909	Dec. 1908	Jan. 1908
Under 1 year.....	563	455	599	Other nervous dis.	55	49	85
Between 1 and 5 years	232	220	254	Heart diseases.....	224	260	232
Between 5 and 20 yrs.	104	159	189	Apoplexy	62	55	39
Bet. 20 and 60 years.	1,138	1,030	1,317	Bronchitis—total ...	81	59	118
Over 60 years.....	600	584	737	Acute	76	56	104
By important causes—				Chronic	5	3	14
Diphtheria	60	87	61	Nephritis (Bright's disease)	195	177	191
Scarlet fever	52	58	60	Violence—all forms..	183	177	155
Measles	11	12	13	Suicides	46	34	48
Whooping cough	4	4	8	Accidents	119	135	93
Influenza	18	13	192	Manslaughter	18	8	14
Typhoid fever	22	28	39	All other causes.....	580	525	643
Pneumonia	500	361	570				

The North Shore Branch of the Chicago Medical Society passed the following resolutions and the same have been passed by some of the other branches of the society:

WHEREAS, We, the members of the North Shore Branch of the Chicago, Medical Society, are not in any sense opposed to the giving of medical services to the worthy and deserving poor by the members of the profession individually, in free dispensaries, hospitals or clinics, but we are certainly and unequivocally opposed to extending medical charity to the large number of persons who are absolutely undeserving of charity, and who as a rule secure such services through fraud, or through the maladministration of the dispensaries, hospitals and clinics; and

WHEREAS, The report on "Abuse of Medical Charity" read by Dr. T. H. Renn, and that on "Contract Practice," by Dr. C. D. Pence at the annual meeting of the Chicago Medical Society held on June 19, 1907, prove conclusively that there is good ground for complaint; and

WHEREAS, The statistics show that over $7,000,000 represents the sum given annually as medical charity by approximately 3,000 physicians in the city of Chicago, an average of about $2,500 for each physician; and since the Bureau of Charities reports an expenditure of $2,500,000 for charity by city, county and all other organizations of an eleemosynary nature, it is therefore evident that the doctors are in reality giving three times as much to charity as the entire population of Cook county, which is over 2,000,000 people; and

WHEREAS, We believe that these evils can be eradicated best by establishing a "Clearing House" (as offered by the Bureau of Charities), to which each and every applicant for charity (except those of an emergency nature) must apply, and by which the worthiness of each applicant must be investigated and approved before free services may be rendered by any dispensary, hospital or clinic; and therefore be it

Resolved, By the members of the North Shore Branch of the Chicago Medical Society:

First, That we suggest to the Council of the Chicago Medical Society that immediate action be taken in order to terminate the Abuse of Medical Charity in the city of Chicago and Cook county; and

Second, We further recommend that the Council, through its proper committee, accept the offer of the Bureau of Charities to act as a "Clearing House" in the investigation of patients applying for medical charity; and

Third, That such safeguards be used as to insure prompt and adequate attention to the worthy poor; and

Fourth, That it be considered unethical for any member of the medical profession to foster the abuse of medical charity by rendering free services to any one in hospital, clinic or dispensary without reporting same to the proper or authorized officers for investigation; and

Fifth, That it shall be deemed unethical to continue free treatment of any patient in hospital, clinic or dispensary, after investigation proves such patient to be unworthy of medical charity; and

Sixth, That we hereby instruct our Councilors to present these resolutions to the Council of the Chicago Medical Society; and

Seventh, That a copy of these resolutions be sent to each branch of the Chicago Medical Society for their consideration.

T. Anthony Kreusner,
M. A. Griffin,
Thos. A. Hogan,
J. Thos. Pickerill,
A. H. De Mendoza,
Committee.

CHANGE OF LOCATION.

Dr. E. W. Kinchloe has removed to Glen Ferry, Idaho.

Dr. Joseph Leuer has removed from Chicago to Gary, Ind.

Dr. F. K. Westfall, of Macomb, has moved to St. Joseph, Mo.

Dr. Bruce D. Hart, of Varna, has removed to Lewistown, Ill.

Dr. P. S. Maby, of Varna, has removed to Runnells, Iowa.

Dr. L. D. Rockefeller has removed from Hornsby to Bunker Hill.

Dr. S. Zimmerman, of Chicago, has removed to Valley City, N. D.

Dr. E. H. Rinkle, of Bunker Hill, has retired from active practice.

Dr. A. H. Foelsch has removed to 219 North Robey Street, Chicago.

Dr. N. A. Cronde has removed from Assumption to Chesterfield, his old location.

Dr. F. D. Pratz has removed from Mowequa to 2400 Dearborn Street, Chicago.

Dr. Henry T. Watkins, of Olney, has removed to 102 Washington Street, Chicago.

Dr. J. E. Colloran has removed from 3502 South Halsted Street, Chicago, to Glendale, Ohio.

Dr. Benjamin F. Stults, of New Holland, Ill., has sold his property to Dr. W. C. Paine, of that town, and will remove to some place not yet designated.

MARRIAGES.

Herbert L. Thompson, M.D., to Miss Nymah McLeneham, of Chicago, January 20.

Albert Charles Purcell, M.D., Streator, Ill., to Miss Mayme Wolfe, of Eagle, Ill., January 5.

Albert William Bradford, M.D., Sparland, Ill., to Miss E. Nicholson, of Aurora, Ill., January 31.

August Sauthoff, M.D., Madison, Wis., to Rose Mary Blakelidge, M.D., of LaGrange, Ill., January 20.

William Graham Alexander, M.D., Evanston, Ill., to Mrs. Bertha Edna Tubbs Patrick, of Des Moines, Iowa, January 26.

DEATHS.

HERBERT E. A. HANKE, M.D., Hahnemann Medical College, Chicago, 1905, died at his home in Chicago, February 4.

MARINDA E. FULLAM, M.D., Women's Medical College, Chicago, 1886, died at her home in Aurora, January 5, aged 69 years.

MICHAEL C. MORAN, M.D., Rush Medical College, Chicago, 1882; died at his home in Chicago, January 24, from heart disease, aged 56.

JOHN G. HALL, M.D. (years of practice, Ill., 1887), was found dead in his room in Springfield, Ill., February 2, from asphyxiation, aged 80.

BARNABAS MALLOY, M.D. (years of practice, Ill., 1878), formerly of Olney, Ill., died in St. Louis, January 28, while on his way to Texas for his health.

HENRY O. SMITH, M.D., Bennett Medical College, Chicago, 1883; of DeKalb, Ill.; died at the home of his sister in Yorkville, Ill., January 12, aged 56.

JOHN W. PETRIE (year of practice, Ill., 1878), an eclectic practitioner of Nilwood, Ill., died suddenly at his home, January 31, from heart disease, aged 75.

SIMEON M. ROBERTSON, M.D., College of Physicians and Surgeons, Chicago, 1878, died at his home in Mount Vernon, Ill., from tumor of the stomach, January 30, aged 69.

WASHINGTON BRENTON, M.D., Rush Medical College, Chicago, 1854; a pioneer practitioner of Tuscola, Ill.; died at the home of his daughter in that city, January 28, from senile debility, aged 85.

JOHN LINCOLN GARDNER, M.D., Rush Medical College, Chicago, 1883; a member of the American Medical Association; died at his home in Rochelle, Ill., January 15, from pneumonia, aged 53.

GEORGE GREEN, M.D., Rush Medical College, Chicago, 1870; of Aurora, Ill., died at the home of his sister in Waltham, Mass., January 9, from typhoid fever complicating pneumonia, aged 74.

ELIZABETH JAMES, M.D., Hahnemann Medical College, Chicago, 1876; of Chicago; formerly of Springfield; died in Cook County Hospital, February 8, two months after a fall in which she fractured her leg at the hip, aged 78.

CHARLES HAVEN FRANCIS, M.D., Northwestern University, Chicago, 1901; of Reno, Nev.; a member of the American Medical Association and delegate from Nevada at the Chicago session; secretary of the Washoe County Medical Society; died at his home in New Lenox, Ill., January 14, from Tuberculosis, aged 33.

HENRY CLAY ALLEN, M.D., Cleveland Homeopathic Medical College, 1861; Queen's University, Kingston, Ont., 1872; dean and professor of materia medica in Hering Medical College, Chicago; for several years editor of the *Medical Advance;* died at his home in Chicago, January 22, from heart disease, aged 72.

JOSEPH GREENBERRY WOLFE, M.D., Rush Medical College, Chicago, 1890; a member of the American Medical Association; professor and head of the department of pediatrics in the Chicago College of Medicine and Surgery, and physician to the Frances E. Willard Hospital; died from nephritis in that institution, January 28, five days after an operation for tonsillectomy, aged 48.

Book Notices.

PRACTICAL DIETETICS, WITH REFERENCE TO DIET IN DISEASE. By Alida Frances Pattee. Fifth edition. Price, $1.00 net.

The value of this Miss Pattee's "Practical Dietetics" is shown by the fact that a new edition has been called for each year. Its price places it within the reach of all and it is strictly up-to-date in every particular, supplying practical things for bedside use of value to every active practitioner. We can recommend it very highly to our readers.

GOLDEN RULES OF DIETETICS. The general principles and empiric knowledge of human nutrition; analytic tables of foodstuffs; diet lists and rules for infant feeding and for feeding in various diseases. By A. L. Benedict, A.M., M.D., Buffalo, member of the American Academy of Medicine and of American Gastroenterological Association, etc. Author of Practical Dietetics. C. V. Mosby Medical Book and Publishing Company, St. Louis, 1908. Price, cloth, $3.00 net.

This is one of the series of medical books issued by the Mosby Publishing House in St. Louis and covers the subject of dietetics in a very thorough and reasonable way. The practice of modern medicine should cover all of the subjects enumerated in this work, and such a work as this should be in the practitioner's library and frequently put to practical use.

AMERICAN PRACTICE OF SURGERY. Volume Five. A complete system of the science and art of surgery, by representative surgeons of the United States and Canada. Editors, Joseph D. Bryant, M.D., LL.D., and Albert H. Buck, M.D., of New York City. Complete in eight volumes. Profusely illustrated. New York: William Wood & Co., 1908.

The fifth volume of American Practice of Surgery is a worthy successor of the four which have preceded it. It deals with regional surgery of the head. This includes the brain, the face, the pallet, the eye, the ear, pharynx, larynx and trachea. The plates and illustrations throughout are mainly new and well adapted to their purpose. Our readers will find this system an accurate index to the practice of surgery as it exists at this time, and it should be in the library of every progressive practitioner.

TEXT-BOOK OF DISEASES OF THE NOSE, THROAT AND EAR. For the use of students and general practitioners. By Francis R. Packard, M.D., professor of diseases of the nose and throat in the Philadelphia Polyclinic Hospital and College for Graduates of Medicine. Illustrated. Philadelphia and London: J. B. Lippincott Company, 1909.

In this work the Lippincott Company has presented a very clear exposition of what every practitioner should know concerning the important subject of the diseases of the nose, throat and ear. As the author says, "some knowledge of

this subject is absolutely necessary to every practitioner, for there are probably no special branches which come so intimately in relation to the work of the general practitioner as these do, and there are none of which a little knowledge may be turned to more useful account." It seems to us more space could have been given to the description of laryngoscopy and bronchoscopy than the five lines given. Otherwise the book is a very valuable treatise.

BACTERIAL FOOD POISONING. A concise exposition of the etiology, bacteriology, pathology, symptomatology, prophylaxis and treatment of so-called ptomaine poisoning. By Prof. Dr. A. Dieudonné, Munich. Authorized translation, edited, with additions, by Dr. Charles Frederick Boldaun, Bacteriologist, Research Laboratory, Department of Health, City of New York. 125 pages. E. B. Treat & Co., Medical Publishers, New York. Price, cloth, prepaid, $1.00 net.

Published less than a year ago, Prof. Dieudonné's manual on "Bacterial Food Poisoning" has already become favorably known as one of the best presentations on the subject. In the present translation the editor has incorporated descriptions of a number of recent outbreaks of food poisoning, elaborating upon the prophylaxis applicable to American conditions, and also going more fully into detail on the subject of treatment. He has slightly rearranged the material so that paragraph headings could be inserted and the subject of all chapters discussed in the same sequence. An index has also been added to facilitate reference, and this, with other changes and additions, greatly enhances the value of the volume.

DISEASES OF THE DIGESTIVE CANAL (Œsophagus, Stomach, Intestines). By Dr. Paul Cohnheim, specialist in diseases of the stomach and intestines in Berlin. From the second German edition. Edited and translated by Dudley Fulton, M.D., lecturer on medicine, University of Southern California, Los Angeles. Illustrated. Philadelphia and London: J. B. Lippincott Company.

Diseases of the Digestive Canal, Cohnheim's excellent work, is given to the English-speaking world by the labors of Dr. Dudley Fulton, of Los Angeles, Cal. He has studied the modern methods of diagnosis and therapeutics of the diseases of digestion in Cohnheim's clinic and is thoroughly familiar with the principles upon which the master book is based. The 373 pages of the work enable the author to present the subject in a very clear and succinct way for the use of the general practitioner, and we believe will be more acceptable than the very large volumes which have usually been placed on the market upon this subject. The general practitioner will be glad to know that the greatest amount of information can be obtained from the subjective symptoms rather than from the complicated details of laboratory work, thus enabling any practitioner to diagnose all diseases of the digestive organs and treat most of them himself.

CLINICAL DIAGNOSIS AND TREATMENT OF DISORDERS OF THE BLADDER, WITH TECHNIQUE OF CYSTOSCOPY. By Follen Cabot, M.D., Professor Genitourinary Diseases, Post-Graduate Medical School, Attending Genitourinary Surgeon Post-Graduate and City Hospitals, New York. 225 pages; 41 illustrations; 1 colored plate. E. B. Treat & Co., Medical Publishers, New York. Price, prepaid, $2.00.

This book has been written for the guidance of the general practitioner, the chief aim of the author being to give practical methods for the diagnosis and treatment of disorders of the urinary bladder. After considerable experience with both the medical and surgical sides of the subject, the need of such a book has become apparent. Many practitioners in the past have felt that the technique of cystoscopy was beyond their reach, but the recent improvements and reduction in

cost of the instruments for this purpose have brought it within the reach of all, thus enabling them to accurately diagnose and successfully treat various hitherto obscure disorders of the bladder and kidneys. While cystoscopy has justly been accorded an important position as a means of diagnosis and also in the treatment of many disorders, all useful methods have been discussed.

DISEASES OF THE GENITOURINARY ORGANS AND THE KIDNEY. By Robert Holmes Greene, A.M., M.D., New York, and Harlow Brooks, M.D., New York. Second Edition, revised and enlarged, with 323 illustrations. Philadelphia and London: W. B. Saunders Company, 1908. Price, cloth, $5.00 net.

This, the second edition of this valuable work, has appeared in a little over a year after the first edition, and this testifies louder than words the reception which has been given to the book. In the preface to the first edition the authors say: "It has been the purpose of the writers to present in this volume a discussion of the more important disease conditions of the urogenital tract, taken from the standpoint of the general practitioner and surgeon. In so far as possible, they have attempted to incorporate such methods as they personally have found most practical and useful, all of which they believe may be successfully employed in the hands of any well-equipped practioner, familiar with modern medical and surgical technic. The writers do not profess that the book is complete; this would be impossible in a work of this size. They have attempted to devote the greatest amount of space and the fullest descriptions to those conditions and methods which have appeared to them to be of the greatest importance, or to those which, being of recent development, may be presumed to be less familiar to the practitioner." This statement sufficiently indicates the character of the work, which is especially valuable to the ordinary practitioner of medicine in America. It gives us pleasure to recommend it to our readers.

THE PROPAGANDA FOR REFORM IN PROPRIETARY MEDICINES. Fifth Edition, revised to Sept. 12, 1908. Press of the American Medical Association. Price, paper cover, 10 cents; cloth, 35 cents.

The scope of this work is accurately set forth in the preface which we print as follows: "In February, 1905, the Council on Pharmacy and Chemistry of the American Medical Association was organized to investigate the proprietary medicine question and to pass on those which should be up to the standard required of ethical proprietary medicines. From time to time reports of this Council have appeared in the columns of *The Journal of the American Medical Association*, and *The Journal* has also contained other matter relating to the question of nostrums and proprietary medicines not directly connected with the work of the Council. Requests have been received repeatedly for this or that number of *The Journal* containing an article on the subject, and as it has been impossible to furnish many of the copies asked for, it has been thought best to collect some of the matter and issue it in this reprint form. The matter is reprinted from *The Journal*, and following each article is given the date on which it appeared." Our readers will find the collection of reprints of *The Journal* in this little work a very valuable hand-book to have upon the desk to be able to show to patients and traveling drug men the abuses which have grown up in the proprietary medicine matter. With the aid of this book almost any one might be able to prepare an argument for the public press which would do a great deal toward driving this evil out of existence.

GONORRHEA IN WOMEN. By Palmer Findley, M.D. C. V. Mosby Medical Book and Publishing Company, St. Louis, Mo., 1908. Price, cloth, $2.00 net.

Dr. Findley, now residing in Omaha, was connected with one of the medical schools of Chicago for some time, and is well known to our members. His

monograph of 112 pages on the subject of Gonorrhea in Women assembles the most important facts in this disastrous disease upon the female organism. It is gratifying to know that the views expressed by Noeggerath of New York City in 1878 have been fully acccepted, and as Bumm has happily put it, "Noeggerath was more fortunate than Semmelweis; he lived to see the triumph of his observations. For this he has to thank Neisser, who soon after discovered the gonococcus and made possible the certain proofs of his statements relative to the frequency of the lesion." Dr. Findley believes that prior to these epoch-making periods, gonorrhea was diagnosed in the male with comparative ease, because of the fact that of 100 discharges from the male uretara 99 were due to gonorrhea, while in the female urethral and leucorrheal discharges are due to a great many causes, and therefore the only positive means of identifying a gonorrheal discharge is to recognize the essential cause. Noeggerath made extended observations in New York City and published statistics that provoked no little criticism. He stated that 80 per cent. of married men have had gonorrhea; that 90 per cent. of these have never been thoroughly healed, and that of five married women three have gonorrhea. That his deductions from personal observations are regarded as extravagant and unwarranted would seem apparent, from a study of the literature.